ANNUAL STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT

Revised June 30, 2021

Virginia Department of Transportation Small Municipal Separate Storm Sewer System (MS4)

In Compliance with:

VPDES Permit for Discharges of Stormwater from MS4 (VA0092975)

Coverage from July 01, 2017 to June 30, 2022

Prepared By:

Virginia Department of Transportation

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CERTIFICATION

"I certify under penalty of law that all documents and all attachments related to the submission and updating of the Virginia Department of Transportation's (VDOT) Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management have been prepared under my direction or supervision in a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of a fine and imprisonment for knowing violations."

Signature:  Susan H Keen
2021.06.30 06:15:54-04'00'

Name: Susan Keen, P.E.

Title: State Location and Design Engineer

Date: 6/30/2021

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VDOT SWPPP General Information Sheets

* *Reference Publications are available on VDOT's web site.*

1. INTRODUCTION

The Virginia Department of Transportation (VDOT) is responsible for administering, implementing and complying with the Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM). In accordance with Va. Code §§ 62.1-44.15:27.F and 62.1-44.15:31, this document serves as the annual submittal to the Virginia Department of Environmental Quality (DEQ) of standards and specifications developed so that VDOT can continue to operate under Annual Standards and Specifications for ESC and SWM. This document establishes general specifications for the control of erosion and sedimentation and stormwater management for regulated land disturbing activities. These Annual Standards and Specifications for ESC and SWM shall be consistent with the requirements of the Virginia Erosion and Sediment Control Law and associated regulations and the Virginia Stormwater Management Act and associated regulations, where applicable. The specifications shall apply to applicable VDOT projects pursuant to § 62.1-44.15:31 of the Code of Virginia, which allows annual standards and specifications for state agency projects to "annually submit a single set of standards and specifications for Department approval that describes how land-disturbing activities shall be conducted." VDOT projects not otherwise exempted from ESC or SWM requirements, will comply with the requirements of these annual standards and specifications.

These Annual Standards and Specifications for ESC and SWM must be submitted annually to DEQ for review and approval. VDOT is responsible for ensuring that individual project plans are developed and implemented in compliance with these Annual Standards and Specifications and applicable laws and regulations. As a holder of Annual Standards and Specifications, VDOT administers compliance with these Annual Standards and Specifications for ESC and SWM for projects through self-administration of these Standards and Specifications, including plan review, inspection and overall compliance rather than the individual localities in which the projects are located. VDOT may be required to submit relevant project documentation and plans for covered activities to the DEQ. DEQ receives regular notifications of the work done by VDOT and provides random inspections and inspections in response to complaints to assure compliance. Enforcement shall be administered by the DEQ and the State Water Control Board where applicable. DEQ and the State Water Control Board has the authority to provide project oversight and enforcement as necessary and comprehensive program compliance review and evaluation pursuant to § 62.1-44.15:56. VDOT and its construction contractors will implement this plan as appropriate for all regulated construction in Virginia unless a project-specific variance to the Virginia Erosion and Sediment Control Laws and regulation; project-specific exception to Virginia Stormwater Management Act and associated regulations; or deviation from the DEQ approved VDOT Annual Standards & Specification for ESC & SWM has been reviewed and granted by the DEQ. Variance, exception, and deviation requests will be considered freestanding of this Annual Standards and Specifications submission and on a site-specific basis.

1.1 APPLICABILITY

These standards and specifications are applicable to all regulated land disturbing activities undertaken by or for VDOT including projects developed under the PPTA and Design Build process, Capital Outlay projects and non-routine maintenance activities, including those performed by state forces or hired equipment. Projects conducted in multiple phases which are implemented through a common plan of development and cumulatively exceed the thresholds are considered regulated, even if individual components of those projects may not exceed the thresholds.

Certain non-VDOT projects and certain PPTA projects may submit a request to utilize these Annual Standards and Specifications, in whole or in part, which must be accepted and approved in advance by both VDOT and DEQ. Instructional information describing this process can be found in VDOT Instructional and Informational Memorandum (IIM) LD-258 (Appendix A) and form 445I as referenced in IIM LD-242 (Appendix C).

Land Disturbance thresholds for VDOT activities covered under these standards and specifications are outlined in the ESC/SWM/VPDES Construction Permit Requirements Flow Chart (Appendix B) and may apply to both regulated construction and maintenance activities exceeding the thresholds. The VPDES permit referenced in the flowchart is the General VPDES Permit for Discharges of Stormwater from Construction Activities (referred to herein as the Construction General Permit, or CGP).

Procedures for obtaining CGP permits for VDOT projects are contained in VDOT Instructional and Informational Memorandum (IIM)-LD-242 (Appendix C).

2. ADMINISTRATION

2.1 CERTIFIED PERSONNEL

2.1.1 Introduction

The Virginia Department of Transportation (VDOT) implements portions of the Virginia Erosion and Sediment Control Program (VESCP) and Virginia Stormwater Management Programs (VSMP) for regulated land disturbing activities within its jurisdiction, including projects with discharges of stormwater from construction activities that are permitted under the Virginia Pollutant Discharge Elimination System (VPDES) program. Under the terms of these Annual Standards and Specifications for Erosion and Sediment Control (ESC) and Stormwater Management (SWM) and a VPDES permit for operation of a Municipal Separate Storm Sewer System (MS4) Program, VDOT provides that implementing personnel obtain certifications or qualifications comparable to those required for VSMP personnel pursuant to the Virginia Stormwater Management Act, subsection B of § 62.1-44.15:30 and Virginia Stormwater Management Regulation, 9VAC25-870-170.A.5.

Under the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq.) and Virginia Stormwater Management Act (§ 62.1-44.15:24 et seq.) and attendant regulations, regulated activities require the involvement and oversight of individuals who hold a certificate of competence from the SWCB or are otherwise deemed "qualified personnel". In addition, a number of documents submitted by VDOT to the SWCB and the DEQ for compliance with VPDES permits must meet specific signatory requirements. The definitions of and requirements for certification issued by the DEQ on behalf of the SWCB are detailed in the Erosion and Sediment Control and Stormwater Management Certification Regulations or VESCSMC Regulations (9VAC25-850 et al).

This document is intended to identify which individuals acting on behalf of VDOT require certification or qualification, and what documents require certification and signature by specific individuals or positions in order for the VDOT Erosion and Sediment Control (ESC) and Stormwater Management (SWM) Programs to remain consistent and compliant with Virginia laws and regulations.

2.1.2 Certifications and Qualifications

A number of roles referenced by the VESCP and VSMP and VPDES permits are required to be certified or otherwise qualified to fulfill requirements of the laws, regulations, permits, and VDOT's Annual Standards and Specifications. The certification or qualifications required include the following:

- Qualified Personnel
- Responsible Land Disturber (RLD)
- Erosion and Sediment Control Contractor Certification (ESCCC)
- ESC Program Administrator
- ESC Plan Reviewer
- ESC Inspector
- ESC Combined Administrator
- SWM Program Administrator
- SWM Plan Reviewer
- SWM Inspector
- SWM Combined Administrator
- Licensed Professionals practicing Architecture, Professional Engineering, Land Surveying, or Landscape Architecture

In addition, individuals who hold both an ESC and a SWM certification in one area (administration, plan review, inspection, or combined administrator) can turn in their two certificates to the DEQ and apply for a dual certificate in that area (i.e., a dual plan reviewer).

The roles and responsibilities for qualified and certified personnel are defined in Virginia laws and regulations, as well as VDOT standards and specifications. Bracketed [AS&S Holder] references are adaptations from the regulations to denote that VDOT is an Annual Standards and Specification Holder (AS&S Holder) rather than a VESCP or VSMP Authority. The following defines the roles and responsibilities as defined and implemented on VDOT projects.

- **Qualified Personnel** means a person knowledgeable in the principles and practices of erosion and sediment and stormwater management controls who possesses the skills to assess conditions at the construction site for the operator that could impact stormwater quality and quantity and to assess the effectiveness of any sediment and erosion control measures or stormwater management facilities selected to control the quality and quantity of stormwater discharges from the construction activity. Many tasks conducted by VDOT staff or contractors require "qualified personnel" to complete, document, and sign or certify land-disturbing activities, including SWPPP inspections.

- **Responsible Land Disturber**, also known as an **RLD,** is defined as a person holding a "certificate of competence…who will be in charge of and responsible for carrying out the land-disturbing activity". For VDOT administered projects, the **RLD** is usually the Area Construction Engineer (ACE) for a CN project; Residency Administrator for a Maintenance project; or another certified individual delegated authority to serve as the RLD.

- **Erosion and Sediment Control Contractor Certification** or **ESCCC** is a VDOT requirement from Section 107.16(a) of the R&B Specifications that applies to contractors working on VDOT land-disturbing activities. While the certification is not issued by the SWCB or DEQ, VDOT established the certification as a means of training contractors and identifying **Qualified Personnel** on VDOT projects. The **ESCCC** requires training and passing a certification examination approved by VDOT and delivered by the construction industry in Virginia under VDOT oversight.

- An **ESC Program Administrator** is the person or persons responsible for administering and enforcing the erosion and sediment control program of an [AS&S Holder], and is a required position for every [AS&S Holder]. The **ESC Program Administrator** is defined as an employee or agent of an [AS&S Holder] who holds a certificate of competence from the SWCB in the classification of Program Administrator in the area of ESC. An [AS&S holder] may enter into agreements or contracts with soil and water conservation districts, adjacent localities, or other public or private entities to carry out or assist with the responsibilities of this article. The certification of program administration cannot be contracted out and must be an employee of the AS&S holder.

- An **ESC Plan Reviewer** is defined as an employee or agent of an [AS&S Holder] who holds a certificate of competence from the SWCB in the classification of Plan Reviewer in the area of ESC. The VESCL states that an erosion and sediment control plan shall not be approved until it has been reviewed by a certified **ESC Plan Reviewer**. *Note: Holders of certain professional licenses in Virginia* ***<u>are deemed</u>*** *certified as an* ***ESC Plan Reviewer****, including Architects, Professional Engineers, Land Surveyors, Landscape Architects, and Certified Professional Soil Scientists.*

- An **ESC Inspector** means an employee or agent of an [AS&S Holder] who holds a certificate of competence from the SWCB in the classification of Inspector in the area of ESC who must conduct all inspections of land-disturbing activities by an [AS&S Holder].

- **ESC Combined Administrator** means an employee or agent of an [AS&S Holder] who holds a certificate of competence from the SWCB in the classification of Combined

Administrator in the area of ESC who can act as an ESC program administrator, plan reviewer, and project inspector.

- A **SWM Program Administrator** is defined as an employee or agent of an [AS&S Holder] who holds a certificate of competence from the SWCB in the classification of program administrator in the area of SWM. The VSMP Regulation requires that a VSMP include a certified **SWM Program Administrator** responsible for administering the program. A VSMP authority may enter into contracts with third-party professionals who hold certificates of competence in the appropriate subject areas, as provided in subsection A of § 62.1-44.15:30, to carry out any or all of the responsibilities that this article requires of a [AS&S program], including plan review and inspection but not including enforcement. The certification of program administration cannot be contracted out and must be an employee of the [AS&S holder].

- **SWM Plan Reviewer** means an employee or agent of an [AS&S Holder] who holds a certificate issued by the SWCB demonstrating competency in the area of plan review for SWM. The VSMA requires that every SWM plan be reviewed by a **SWM Plan Reviewer** before being approved. Unlike the ESC Plan Reviewer certification, holding a professional license issued in Virginia is <u>not</u> equivalent to certification as a SWM Plan Reviewer.

- A **SWM Inspector** means an employee or agent of an [AS&S Holder] holding a certificate from the SWCB in the classification of Inspector in the area of SWM who must conduct inspections of land-disturbing activities by an [AS&S Holder] during construction.

- A **SWM Inspector** is also the minimum qualification for conducting inspections of stormwater Best Management Practices (BMPs) after construction.

- **SWM Combined Administrator** means an employee or agent of an [AS&S Holder] who holds a certificate from the SWCB in the combined classifications of program administrator, plan reviewer, and project inspector in the area of SWM.

- A **professional registered in the Commonwealth of Virginia** shall appropriately seal and sign elements of a stormwater management plan that include activities regulated under Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia. A **professional registered in the Commonwealth of Virginia** may include an Architect, Professional Engineer, Land Surveyor, or Landscape Architect.

- A **licensed professional** must also certify post-construction BMPs after construction, and some post-construction BMP inspections may be documented by or under the supervision of a **licensed professional**.

Individuals or positions at VDOT or associated with VDOT projects, such as VDOT employees, representatives, consultants, and contractors, may serve in positions as certified or qualified personnel. The list in Table 1, while not exhaustive, addresses the ESC and SWM roles and responsibilities. The table also includes VDOT position(s) associated with each role and responsibility; and the type(s) of certification, qualification, or license associated with each role and responsibility. A Key is provided with abbreviations and acronyms used in the table.

2.1.3 Signatures and Certifications

Signatory requirements are also included under the laws, regulations, and permit for Registration Statements, Notices of Termination, and other reports and documents required to be submitted by the SWCB, DEQ, or permits. Most signatures required by the laws, regulations, and permits must include the following certification statement:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The certification is generally required on documents signed by the Senior Executive Officer and others with written Delegation of Authority to sign on behalf of VDOT as listed in the SWPPP and authorized by VDOT Form LD-445H (LD-445 form series is a component of IIM-242, Appendix C). Table 1 summarizes the forms and other documents that require the signature of individuals with specific roles and responsibilities, as well as any qualification or certification required of the individual signing the forms.

Table 1 – Summary of ESC/SWM Roles & Responsibilities

Role & Responsibility	VDOT Position	Certification/License	Signature Requirements
PROGRAM ADMINISTRATION			
Senior Executive Officer	State L&D Engineer	None	Registration Statements, Notices of Termination, Delegation of Authority, Reports and other documents required by SWCB, DEQ, or CGP
ESC Program Administrator	L&D MS4 Program Manager	ESC PA, Dual PA, ESC CA, or Dual CA	As delegated by Senior Executive Officer
ESC/SWM Program Administration	MS4 Section Managers, District Hydraulics Engineers, District NPDES Coordinators	ESC PA, Dual PA, ESC CA, or Dual CA	As delegated by Senior Executive Officer
SWM Program Administrator	L&D MS4 Program Manager	SWM PA, Dual PA, SWM CA, or Dual CA	As delegated by Senior Executive Officer
SWM Program Administration	MS4 Section Managers, District Hydraulics Engineers, District NPDES Coordinators	SWM PA, Dual PA, SWM CA, or Dual CA	As delegated by Senior Executive Officer
PRELIMINARY ENGINEERING			
SWM Planner and Designer	Hydraulic Engineer, Consultant Designer	Professional License (A, PE, LS, LA)	Seal and sign SWM plans and supporting documents
ESC Plan Reviewer	Hydraulic Engineer, Consultant Designer	ESC PR, Dual PR, ESC CA, Dual CA, or Professional License (A, PE, LS, LA, or CPSS)	Form LD-445C, Updates to ESC Plan
SWM Plan Reviewer	Hydraulic Engineer, Consultant Designer	SWM PR, Dual PR, SWM CA, or Dual CA	Form LD-445C, Updates to SWM Plan
Responsible Land Disturber	ACE, RA	RLD, ESC (any), or Professional License (A, PE, LS, LA, or CPSS)	SWPPP General Information Sheet - certification
CONSTRUCTION			
Qualified Personnel	Construction Contractor	ESCCC, ESC IN, Dual IN, ESC CA, Dual CA, or Professional License (A, PE, LS, LA, or CPSS)	Form C-107 Part I
Responsible Land Disturber	ACE	RLD, ESC (any), or Professional License (PE, A, LS, LA, or CPSS)	Form C-107 Parts I and/or II, Updates to SWPPP, Record Plan Set
ESC Inspector	ACE, CM, PI, CEI	ESC IN, Dual IN ESC CA, or Dual CA	Form C-107 Part I
SWM Inspector	ACE, CM, PI, CEI	SWM IN, Dual IN SWM CA, or Dual CA	Form C-107 Part II
VPDES Construction Permit Coverage Termination Notice	ACE	RLD	Form LD-445D
SWMF/BMP Certification	ACE, Consultant	Professional License (A, PE, LS, or LA)	Form LD-445D

Table 1 – Summary of ESC/SWM Roles & Responsibilities (continued)

Role & Responsibility	VDOT Position	Certification/License	Signature Requirements
MAINTENANCE ACTIVITIES			
Qualified Personnel (Maintenance requiring a VPDES permit)	Maintenance Contractor, Minimum 1 person at each Area Headquarters (suggest backup at Residency level (MOM, ARA, etc.) (see note 1 below)	ESCCC, ESC IN, Dual IN, ESC CA, Dual CA, or Professional License (A, PE, LS, LA, or CPSS)	SWPPP Inspection Reports
Responsible Land Disturber (Maintenance requiring an ESC Plan)	Minimum 1 person at each Area Headquarters (Maint. Supervisor or Maint. Crew Leader) (see note 1 below)	RLD, ESC (any), Professional License (A, PE, LS, LA, or CPSS)	SWPPP, Form LD-445D
ESC Inspector (Maintenance requiring an ESC Plan)	Minimum 1 person at each Area Headquarters (Maint. Supervisor or Maint. Crew Leader) (see note 1 below) (also see note 2 below)	ESC IN, Dual IN, ESC CA, or Dual CA	SWPPP Inspection Reports
SWM Inspector (Maintenance requiring a VPDES permit and post-construction SWMF/BMP inspections)	Minimum 1 person at each District office (varies by District, but could include any of the following: Roadside Manager or Roadside Coordinator Performance Reporting Manager, SWM Program Manager, Infrastructure Manager	SWM IN, Dual IN, SWM CA, or Dual CA For Post-Construction inspections, also include SWM IN, Professional License (A, PE, LS, or LA)	SWPPP Inspection Reports Post-Construction Inspection Reports
POST-CONSTRUCTION INSPECTIONS			
Post-Construction SWMF/BMP Inspector	Varies by District, but could include: Roadside Manager, Roadside Coordinator, District Performance Reporting Manager, SWM Program Manager, or District Infrastructure Manager	SWM IN, or Professional License (A, PE, LS, or LA)	Post-Construction Inspection Reports

(1) For Maintenance Activities Districts, Residencies and Area Headquarters may choose to have more people certified in various categories/roles if that is necessary to meet workload requirements and ensure backup for personnel contingencies (e.g., extended illness or other absence, job turnover, etc.)

(2) For Maintenance Activities RLD and ESC Inspector may not be the same person on any individual project

Key:
A = Architect
ACE = Area Construction Engineer
AHQ = Area Headquarters
BMP = Best Management Practice
CA = Combined Administrator
CEI = Construction Engineering and Inspection
CGP = Construction General Permit or "General VPDES Permit for Discharges of Stormwater Associated with Construction Activities"
CM = Construction Manager
CPSS = Certified Professional Soil Scientist
DEQ = Department of Environmental Quality
Dual = ESC and SWM Combined
ESC = Erosion and Sediment Control
ESCCC = Erosion and Sediment Control Contractor Certification
ESC/SWM = ESC and SWM
IN = Inspector
L&D = Location and Design
LA = Landscape Architect
LS = Land Surveyor
MOM = Maintenance Operations Manager
MS4 = Municipal Separate Storm Sewer System
PA = Program Administrator
PE = Professional Engineer
PI = Project Inspector
PR = Plan Reviewer
RA = Residency Administrator
RLD = Responsible Land Disturber
SWCB = State Water Control Board
SWM = Stormwater Management
SWMF = Stormwater Management Facility
SWPPP = Stormwater Pollution Prevention Plan
Form LD-445C = Erosion and Sediment Control (ESC) and Stormwater Management (SWM) Certification Form
Form LD-445D = Termination Notice
Form LD-445H = Delegation of Authority
Form C-107 Part I = Construction Runoff Control Inspection Form (CRCIF) (Appendix D)
Form C-107 Part II = VDOT Inspection Sheet (Appendix D)

2.2 PLAN REVIEW AND ADMINISTRATION

This section outlines requirements for Erosion and Sediment Control and Stormwater Management, along with applicable plan contents for review and approval by DEQ certified personnel (as described in Section 2.1 of this document) prior to initiating regulated land disturbing activities.

2.2.1 ESC Requirements

VDOT follows the policies and procedures described in the Virginia Erosion and Sediment Control Handbook (VESCH). VDOT utilizes a comprehensive design, review and approval program that includes review for consistency with the general specifications for Minimum Standards and Specifications (STDS & SPEC). The general specifications for ESC apply to land-disturbing activities and are included in these Annual Standards and Specifications by reference, as follows:

- Virginia Erosion and Sediment Control Law (§62.1-44 et seq. as amended);
- Virginia Erosion and Sediment Control Regulations (9VAC25-840 et seq. as amended);
- Virginia Erosion and Sediment Control Certification Regulations (9VAC25-850 et seq. as amended);
- Virginia Erosion and Sediment Control Handbook, 1992, as amended, and related technical documents and guidance specifications;
- Technical Bulletins and Memos, as amended, on the DEQ website.
- VDOT Drainage Manual
- VDOT Road and Bridge Standards and Specifications (as amended through supplements)

ESC plans and documents must be submitted to the District Hydraulic Engineer for review and approval. Hydraulic Engineers must maintain certifications in accordance with Section 2.1 to ensure compliance with these Annual Standards and Specifications for ESC and SWM. All practices incorporated into plans should include established and approved VESCH and VDOT control measures.

The VDOT Approved Products List (APL) may contain non-VESCH control measures. The APL references products which are accepted for use on VDOT projects and considered to meet the VDOT Road and Bridge specifications for use with applicable VDOT standard. VDOT's APL review and certification may place certain limitations on the use of the non-VESCH practices. Limitations and restrictions on Non-VESCH control measures incorporated into plans should be communicated in the field and should include applicable practical information including definition, purpose, conditions where practice applies, planning considerations, design criteria, construction specifications, design tables and plates and maintenance/inspection requirements. Should non-VESCH control measures fail to effectively control soil erosion,

sediment deposition, and non-agricultural runoff, then VESCH control measures shall be utilized. The VDOT R&B Standards, Specifications, and the APL can be accessed through the VDOT websites located here, respectively:

R&B Standards:
https://www.virginiadot.org/business/locdes/2016_road_and_bridge_standards.asp

R&B Specifications
http://www.virginiadot.org/business/const/spec-default.asp

APL
http://www.virginiadot.org/business/bu-materials-New-Products.asp

A Crosswalk Table that references VDOT R&B EC Standards, Specifications, and APL that are used to satisfy VESCH, is provided in Appendix J as a guide.

2.2.2 ESC Plan Contents

As applicable, ESC drawings must include the following:

a) Minimum standards 1 through 19 as applicable;
b) General Notes;
c) Total area of disturbance. If the project is phased, the total area of disturbance for each phase must be noted;
d) Proposed impervious area; if any
e) Construction sequence of operations with staged implementation of ESC measures for each phase;
f) Existing features that will be demolished or removed that may require ESC measures;
g) Location of various support activities including, but not limited to, areas where wash water may occur; storage area for chemicals, fuels and fertilizers; concrete wash out areas; vehicle fueling and maintenance areas; sanitary waste facilities and construction waste storage; and
h) When applicable, the location of the on-site rain gauge must be included (as part of the SWPPP).

Erosion and Sediment Control Plans shall be developed in accordance with the above and in accordance with Chapter 10 of the VDOT Drainage Manual.

The General VPDES Permit for Discharges of Stormwater Associated with Construction Activities (Construction General Permit or CGP) also has ESC plan requirements that apply to projects subject to the CGP (9VAC25-880-70 Part II B.2). These include the following:

a) An erosion and sediment control plan designed and approved in accordance with the Virginia Erosion and Sediment Control Regulations (9VAC25-840) or an erosion and sediment control plan prepared in accordance with annual standards and specifications approved by the department.
b) All erosion and sediment control plans shall include a statement describing the maintenance responsibilities required for the erosion and sediment controls used.
c) An approved erosion and sediment control plan or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications, implemented to:
    i. Control the volume and velocity of stormwater runoff within the site to minimize soil erosion;
    ii. Control stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;
d) Minimize the amount of soil exposed during the construction activity;
e) Minimize the disturbance of steep slopes;
f) Minimize sediment discharges from the site in a manner that addresses (i) the amount, frequency, intensity, and duration of precipitation; (ii) the nature of resulting stormwater runoff; and (iii) soil characteristics, including the range of soil particle sizes present on the site;
g) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal, and maximize stormwater infiltration, unless infeasible;
h) Minimize soil compaction and, unless infeasible, preserve topsoil;
i) Ensure initiation of stabilization activities, as defined in 9VAC25-880-1, of disturbed areas immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days; and
j) Utilize outlet structures that withdraw stormwater from the surface (i.e., above the permanent pool or wet storage water surface elevation), unless infeasible, when discharging from sediment basins or sediment traps.

2.2.3 SWM Requirements

Portions of these Annual Standards and Specifications related to Stormwater Management shall apply to regulated land-disturbing activities which are not exempted and all projects which are required to obtain CGP coverage. The following requirements shall apply, when applicable, and are hereby incorporated by reference:

- Virginia Stormwater Management Act (§62.1-44 et seq. as amended);
- Virginia Stormwater Management Permit Regulations (9VAC25-870 et seq. as amended);
- Virginia Stormwater Management Handbook, 1999, as amended; and
- Technical Bulletins and Memos, as amended, on the DEQ website.
- Construction General Permit Regulation 9VAC25-880 et seq.
- Standards and Specifications for stormwater practices as published on the Virginia Stormwater BMP Clearinghouse https://www.swbmp.vwrrc.vt.edu/
- VDOT Drainage Manual
- VDOT BMP Design Manual of Practice
- VDOT Road and Bridge Standards and Specifications (as amended through supplements)

Stormwater Management Plans shall be developed in accordance with the above and in accordance with Chapters 10 and 11 of the VDOT Drainage Manual. The role of VDOT Stormwater BMP Special Provisions is to facilitate the installation of practices with the purpose of addressing construction, inspection, and maintenance during the construction phase. These Special Provisions may be incorporated into contracts for this purpose.

2.2.4 SWM Plan Contents

ESC and SWM plans and documents must be submitted to the District Hydraulic Engineer for review and approval. Plans must be reviewed to ensure compliance with these Annual Standards and Specifications for ESC and SWM.

If applicable, the stormwater management plan shall be implemented as approved or modified by the [AS&S Holder] and shall be developed in accordance with the following:

1. A stormwater management plan for a land-disturbing activity shall apply the stormwater management technical criteria set forth in this part to the entire land-disturbing activity.

2. A stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff.

A complete stormwater management plan shall include the following elements:

1. Information on the type of and location of stormwater discharges, information on the features to which stormwater is being discharged including surface waters or karst features if present, and predevelopment and post development drainage areas;

2. Contact information including the name, address, telephone number, and email address of the owner and the tax reference number and parcel number of the property or properties affected;

3. A narrative that includes a description of current site conditions and final site conditions or if allowed by VDOT as the AS&S Holder, the information provided and documented during the review process that addresses the current and final site conditions;

4. A general description of the proposed stormwater management facilities and the mechanism through which the facilities will be operated and maintained after construction is complete;

5. Information on the proposed stormwater management facilities, including (i) the type of facilities; (ii) location, including geographic coordinates; (iii) acres treated; and (iv) the surface waters or karst features into which the facility will discharge;

6. Hydrologic and hydraulic computations, including runoff characteristics;

7. Documentation and calculations verifying compliance with the water quality and quantity requirements of these regulations;

8. A map or maps of the site that depicts the topography of the site and includes:

a. All contributing drainage areas;

b. Existing streams, ponds, culverts, ditches, wetlands, other water bodies, and floodplains;

c. Soil types, geologic formations if karst features are present in the area, forest cover, and other vegetative areas;

d. Current land use including existing structures, roads, and locations of known utilities and easements;

e. Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these parcels;

f. The limits of clearing and grading, and the proposed drainage patterns on the site;

g. Proposed buildings, roads, parking areas, utilities, and stormwater management facilities; and

h. Proposed land use with tabulation of the percentage of surface area to be adapted to various uses, including but not limited to planned locations of utilities, roads, and easements;

9. If an operator intends to meet the requirements established in 9VAC25-870-63 or 9VAC25-870-66 through the use of off-site compliance options, where applicable, then a letter of availability from the off-site provider must be included; and

10. If payment of a fee is required with the stormwater management plan submission by DEQ, the fee and the required fee form in accordance with Part XIII (9VAC25-870-700 et seq.) must have been submitted.

Elements of the stormwater management plans that include activities regulated under Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia pursuant to Article 1 (§ 54.1-400 et seq.) of Chapter 4 of Title 54.1 of the Code of Virginia.

A construction record drawing for permanent stormwater management facilities shall be submitted to DEQ in accordance with 9VAC25-870-108 and 9VAC25-870-112. The construction record drawing shall be appropriately sealed and signed by a professional registered in the Commonwealth of Virginia, certifying that the stormwater management facilities have been constructed in accordance with the approved plan. VDOT's Special Provision for Construction Record Documentation for Permanent Stormwater Management Facilities (2/1/18) provides instructions for record drawing preparation and certification.

The District Hydraulic Engineer will verify whether a SWM plan is required for submission and will document that the required elements above are included, when applicable. In addition to the above elements, the following documentation will be reviewed and approved prior to initiating the land disturbing activity:

- If applicable, the Stormwater Pollution Prevention Plan (SWPPP) General Insertable Sheets, Erosion and Sediment Control Plan, and Stormwater Management Plan and Calculations;
- If a CGP and/or SWPPP is required for a project, applicable TMDL information and general information shall be included on the appropriate forms, in addition to the required registration statement.

- Post-construction maintenance and inspection requirements of permanent BMPs, if they differ from the VDOT BMP Maintenance Manual.;
- Manufacturer's recommended maintenance and inspection of manufactured permanent BMPs (per the BMP clearing house) if they differ from the VDOT BMP Maintenance Manual.;
- A map or digital file, including the appropriate base data, delineating the area treated by the BMP;
- A map or digital file, including the appropriate base data, depicting the applicable area used to determine percent impervious cover; and

A detailed description of VDOT's process for developing stormwater management plans and VPDES permit applications can be found in IIM-242 (Appendix C), IIM-195 (Appendix E) and the VDOT Drainage Manual.

SWPPPP Contents and VDOT reference documents are described in detail in Chapter 10.3.6 of the VDOT Drainage Manual. A crosswalk addressing permit requirements and how the body of VDOT and project documentation satisfy SWPPP documentation requirements is provided in Appendix F.

Standard details and special provisions for SWM facilities have been developed by VDOT as an aid to streamlining consistency in infrastructure detailing, construction methods and materials. DEQ approved VDOT's use of these details and provisions (see Appendix G). They will be improved upon in the future as VDOT gets a larger installed base and those improvements or updates will be submitted to DEQ periodically in accordance with Section 6 of this document.

2.2.5 Independent Review Requirements.

ESC Plan Reviewer and SWM Plan Reviewer are described/defined in Section 2.1.2.

For all projects covered under these annual standards, it should be noted that the final plan approval for Erosion and Sediment Control and Stormwater Management Plans must come from VDOT as the AS&S Holder or its designee, and must be documented in writing (typically by the District Hydraulics Engineer).

The District Hydraulic Engineer (DHE) shall ensure that both the ESC Plan and post-construction SWM Plan are reviewed and approved by a person appropriately certified through DEQ's SWM and/or ESC Plan Reviewer Certification Program. The Plan Reviewer shall be independent and separate from the project design unit/team that developed the ESC and/or SWM Plan. The form LD-445C shall be used to certify the plan review and approval process.

For D/B/B projects, identification of the independent Plan Reviewer Certifier shall be the responsibility of the District Hydraulic Engineer (DHE). The DHE can utilize VDOT employees, on-call consultants, or other resources, as necessary.

For Capital Outlay projects, identification of the independent Plan Reviewer shall be the responsibility of the Capital Outlay Project Manager (PM). The PM can utilize VDOT employees, on-call consultants, or other resources, as necessary.

For D/B and PPTA projects, identification of the independent Plan Reviewer Certifier shall be the responsibility of the D/B team, so long as the Plan Reviewer is in a Quality Assurance role, is separate from the designer firm, and is not the individual(s) responsible for or have been involved in the preparation, development, signing and sealing of the ESC and SWM Plans.

2.2.6 Revisions

All minor and major revisions to an approved Erosion and Sediment Control Plan or an approved Stormwater Management Plan for the project require review by the District Hydraulic Engineer or other DEQ certified personnel as described in the VDOT Drainage Manual Chapter 10, Section 10.3.9 Field Revisions and Evaluations. Major revisions as described in the Drainage Manual have additional review and approval procedures. For DB projects, this process is outlined in Figure 10.1 *Plan Modification Process Flow Chart* of the Drainage Manual and in a project specific Quality Assurance & Control Plan. Changes shall be documented and dated on the plans and in the SWPPP document. Any changes affecting the registration statement shall secure a permit modification if needed, prior to commencing.

2.3 CGP PERMITTING PROCESS

Projects which equal or exceed 1 acre of cumulative land disturbance are required by DEQ to obtain coverage under the Construction General Permit (CGP). Projects which are less than 1 acre of disturbance individually, but which are part of a larger common plan of development or sale (with cumulative disturbance exceeding 1 acre) are also required by DEQ to obtain coverage under the CGP. VDOT procedures for processing CGPs are outlined in IIM 242 (Appendix C).

2.4 RECORDKEEPING

VDOT must keep records in accordance with the following:

- All individual project records, including approved plans, inspection records, documented field changes, and CGP registration statements (if applicable) must be maintained for a

period of three years after completion of the project or state permit termination. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to VDOT, or as requested by the State Water Control Board.

- A construction record drawing for all permanent, structural stormwater management facilities ("as-built") with seal and signature of a Virginia-licensed Professional Engineer must be maintained by VDOT in perpetuity, or until the stormwater facility is removed.
- Stormwater management facility inspection records must be documented and retained for at least five years from the date of inspection.

Individual Project Records (including not just the plans, but registration statements, documented field changes, and inspection records) must be uploaded to ProjectWise for storage with other project records. Responsibilities for documenting and storing project records (including construction record drawings) are addressed in Section 5 of IIM LD-242.

SWM facility records must be maintained by VDOT District Maintenance personnel and performed in accordance with VDOT SWM facility operation and maintenance policies and governing documents. A centralized BMP maintenance database and data collector application using ArcGIS online is the primary mechanism for tracking SWM facility inspection records.

2.5 COMPLIANCE

While VDOT continues to hold its employees, consultants and contractors to strict environmental compliance standards, regulatory enforcement will be administered by DEQ. VDOT may be required to submit relevant project documentation and plans for covered activities to the DEQ to ensure consistency with these Annual Standards and Specifications and applicable permit requirements. The State Water Control Board has the authority to enforce approved specifications and charge fees equal to the lower of (i) $1000 or (ii) an amount sufficient to cover the costs associated with standard and specification review and approval, project inspections and compliance. The Virginia DEQ will serve as the VESCP and VSMP authority and will perform random site inspections or inspections in response to a complaint to assure compliance with the associated laws/regulations and these Annual Standards and Specifications. Construction contracting firms retained by VDOT are required to comply with contractual obligations, and VDOT will aid in ensuring their compliance with these standards and specifications to the extent practicable.

2.6 VARIANCES, EXCEPTIONS, AND DEVIATIONS

Variance, exception and deviation requests will be considered freestanding of this Annual Standards and Specifications submission and on a site-specific basis. DEQ must review and approve information for variance, deviation and exception requests. "Variances" are requests for relief from provisions in the Virginia Erosion and Sediment Control Regulations. "Exceptions" are requests from relief from the Virginia Stormwater Management Regulations. "Deviations" are requests for modifications to approved guidance (such as VESCH standards or other DEQ ESC or Stormwater guidance). Variances, exceptions, and deviations will be coordinated by the District (DHE or other designee) with VDOT L&D Central Office staff for preparation of the request transmittal to DEQ. A standard template may be provided by Central Office to facilitate the submittal process. VDOT personnel and project team understand that DEQ may request additional information in support of consideration of a variance, exception or deviation including but not limited to the following (if applicable):

i. Introduction

ii. Project Description

iii. Minimum Standard, Regulation or Guidance requested for variance, exception or deviation request.

iv. Existing Conditions and Adjacent Areas

v. Soil Characterization

vi. Critical and Sensitive Areas (Karst, wetland, etc…)

vii. Mitigation

1. ESC Measures
2. Permanent Stabilization
3. Vegetative Restoration
4. Maintenance
5. Critical and Sensitive Areas

viii. Self-Inspection, Reporting and DEQ-Certified Personnel

Documentation of all variances, exceptions and deviations, and documentation of DEQ approval should become part of the SWPPP and should be retained with project records in accordance with recordkeeping requirements and should be listed on the SWPPP General Information Sheets.

2.7 PROJECT TRACKING, REPORTING AND NOTIFICATION

VDOT is responsible for providing project tracking and e-notification to DEQ of all regulated land-disturbing activities subject to these Annual Standards and Specifications to comply with applicable ESC requirements pursuant to 9VAC25-840-65 and applicable SWM requirements pursuant to 9VAC25-870-170.

2.7.1 DEQ Notification

VDOT must electronically notify the DEQ of any project that VDOT intends to construct in Virginia to start the project permitting process. VDOT's registration for permit coverage lists all the required information, including anticipated start date for the project, with the exception of contact information for the specific project staff (who may change from time to time). The administration of the standards and specifications happens at VDOT Central Office and site personnel are dynamic.

DEQ regional office staff have been directed by DEQ central office to coordinate with/contact John Olenik in VDOT Central Office to obtain current contact information for appropriate site personnel, as needed. Contact with VDOT Central Office will ensure better coordination prior to arrival on appropriate parking, access and safety concerns given work in active roadway. This process is intended to assist DEQ in scheduling for inspections.

2.7.2 Non-CGP Projects

In addition to CGP registrations, VDOT will submit every four (4) months a list of non-CGP Regulated Land Disturbing Activity projects that fall under these Annual Standards and Specifications. This information will include:

- Project number or project name;
- Project location including: District, County/City, Latitude & Longitude, nearest intersection;
- Project description;
- Status of Project (Planned, Active, or Complete);
- Estimated Project Start Date;
- Final Project End Date; CBPA LDA Applicability (y/n);
- Acreage of Land Disturbance for Project (xx.xx acres);
- Any variances, waivers, deviations, or exceptions associated with the project

Notification must be made electronically to StandardsandSpecs@deq.virginia.gov. Other questions should be directed to Larry Gavan (804-698-4040) and Kendall May (804-698-4447).

2.7.3 Notice of Coverage

Under the Construction General Permit (CGP), if applicable, the Contractor shall post the notice of coverage letter at a publicly accessible location near an active part of the construction project. The Contractor shall maintain the posted information until the termination of the general permit. The Contractor will also make the SWPPP available as follows:

1. Operators with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for use by those identified as having responsibilities under the SWPPP whenever they are on the construction site.

2. The Contractor shall make the SWPPP and all amendments, modifications, and updates available upon request to the department, the VSMP authority, the EPA, the VESCP authority, local government officials, or the operator of a municipal separate storm sewer system receiving discharges from the construction activity. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the SWPPP's location must be posted near the main entrance of the construction site.

The Contractor shall make the SWPPP available for public review in an electronic format or in hard copy. Information for public access to the SWPPP shall be posted and maintained in accordance with Part II C. If not provided electronically, public access to the SWPPP may be arranged upon request at a time and at a publicly accessible location convenient to the operator or his designee but shall be no less than once per month and shall be during normal business hours. Information not required to be contained within the SWPPP by this general permit is not required to be released.

2.7.4 Termination

Upon completion, final stabilization and final VDOT acceptance of a construction project, permit coverage will be terminated. VDOT will provide notification to DEQ that the permit has been terminated within 30 days of the completion and final acceptance of a project. Internal procedures for processing and requesting a Notice of Termination are contained within Section 8 of IIM LD-242.

3. TECHNICAL CRITERIA

3.1 APPLICABLE LAWS AND REGULATIONS

The following laws and regulations govern the technical criteria, preparation, review and implementation of erosion and sediment control and stormwater management plans in Virginia:

i. SWMA (Stormwater Management Act) – § 62.1-44.15:24. to :50.
ii. VSMP Regulations – 9VAC25-870
iii. Construction General Permit (CGP) - VAR10 General Permit for Discharges of Construction Stormwater – 9VAC25-880
iv. ESC Law – § 62.1-44.15:51 to :66
v. ESC Regulations – 9VAC25-840
vi. SWM and ESC Certification Regulation – 9VAC25-850

3.2 STORMWATER MANAGEMENT TECHNICAL REQUIREMENTS

VDOT policy and detailed requirements technical criteria and preparation of stormwater management plans are addressed in the VDOT Drainage Manual. The underlying criterion are contained in the stormwater regulations and Construction General Permit (CGP). Stormwater plan requirements are specifically addressed in 9VAC25-870-55 and Part II.B.3 of the CGP. Stormwater quality requirements are contained in 9VAC25-870-63 and 9VAC25-870-65 and stormwater quantity requirements are addressed under 9VAC25-870-66. Grandfathering requirements are addressed in the regulations in 9VAC25-870-47 and 9VAC25-870-48. VDOT policies for grandfathering requirements are addressed in detail in Instructional and Informational Memorandum LD-195 (Appendix E).

3.3 EROSION AND SEDIMENT CONTROL TECHNICAL REQUIREMENTS

Detailed VDOT policy and technical requirements for erosion and sediment control are addressed in the VDOT Drainage Manual and applicable sections of the Road and Bridge Standards and Specifications. ESC Plan requirements are consistent with the Construction General Permit Part II.B.2 and ESC Minimum Standards contained in 9VAC25-840-40.

3.4 SWPPP REQUIREMENTS

Requirements for development of a SWPPP are addressed in IIM-LD-242 (Appendix C), and further elaborated on in Chapter 10 of the VDOT Drainage Manual. SWPPPs include approved ESC plans, approved SWM plans, General Information Sheets which provide basic information

and project specific information related to pollution prevention and VDPES CGP requirements. The SWPPP also includes contractor provided materials such as an erosion control plan denoting the locations of support activities and potential pollutant generating activities, and a pollution prevention plan for those activities. A crosswalk document discussing how the various elements of the CGP are addressed is provided as Appendix F.

3.5 MORE STRINGENT LOCAL REQUIREMENTS

Section 4 of IIM-LD-195 (Appendix E) addresses how VDOT satisfies provisions relating to more stringent local requirements. In general, "When requested by a locality's VSMP Authority, VDOT projects located in jurisdictions that have adopted more stringent SWM technical criteria than that required by the VSMP Regulations shall be designed, to the largest extent practicable, to meet the locality's more stringent criteria." The request must be provided in writing and generally must occur prior to the public participating stage of the plan development process, in order for sufficient public notice requirements to be satisfied. In the event that the local technical criteria cannot be implemented, it is the responsibility of VDOT or its designee to demonstrate that the locality's VSMP authority's technical requirements are not practicable for the project under consideration.

4. INSPECTIONS AND BMP DOCUMENTATION

VDOT or its designated representative will continue to be responsible for periodic inspections for compliance with the Erosion and Sediment Control and Stormwater Management Regulations and the CGP, if required. Certified personnel, as outlined in Section 2 of this document, must conduct all inspections. Periodic ESC and SWM Inspections are performed to better assure compliance with these AS&S and the ESC and SWM statutes and regulations. Inspection reports (C-107) should document onsite changes by noting issues of non-compliance. Corrective actions are denoted on those inspection reports and include timeframes for completion. DEQ is the VSMP Authority having oversight of VDOT's program. Periodic compliance inspections will be the responsibility of VDOT. At times, the DEQ may perform additional compliance inspections in their oversight role.

4.1 INSPECTION FREQUENCY

Required inspection frequencies vary depending on whether the project requires a CGP. In addition, a CGP project's location in relation to impaired or exceptional waters may include additional requirements. At a minimum, all projects requiring compliance with Erosion and Sediment Control must maintain compliance with the inspection frequencies for Erosion and Sediment Control. Inspection frequencies are identified in the SWPPP and are governed by Section 107.16(e.) of the VDOT Road and Bridge Specifications, as modified by Special Provision S107J31

4.1.1 CGP Inspections

When a CGP is required for a project, inspections for compliance with the SWPPP (and relevant SWM and ESC elements) must occur in accordance with the following:

The applicable SWPPP inspection requirements specified in Part II F 2 of the CGP must be amended as follows. Inspections must be conducted at the following frequency:

(1) at least once every four business days

or

(2) at least once every five business days, or every 7 calendar days, and no later than 24 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 24 hours between business days, the inspection must be conducted on the next business day.

A measurable storm event means a rainfall event producing 0.25 inches of rain or greater over 24 hours.

At a minimum, CGP inspections must be conducted by Qualified Personnel (See Section 2.1.2 and Table 1 for minimum qualifications and descriptions)

4.1.2 CGP Projects Discharging to Impaired, Exceptional and TMDL Waters

For projects discharging to exceptional waters, **or** to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report **or** for which a Total Maximum Daily Load (TMDL) wasteload allocation has been established and approved prior to the term of the general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus), the following additional requirements will apply:

a. The exceptional water(s), impaired water(s), approved TMDL(s), and pollutant(s) of concern, when applicable, must be identified in the SWPPP;

b. Permanent or temporary soil stabilization must be applied to denuded areas within seven days after final grade is reached on any portion of the site;

c. Nutrients must be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and will not be applied during rainfall events.

At a minimum, CGP inspections must be conducted by Qualified Personnel (See Section 2.1.2 and Table 1 for minimum qualifications and descriptions).

4.1.3 Erosion and Sediment Control

For projects not requiring a construction general permit (CGP), but requiring erosion and sediment control, VDOT or its designated representative will be responsible for periodic inspections in compliance with 9 VAC 25-840-60(B).1. Specifically, VDOT or its designated representative will provide for an inspection during or immediately following initial installation of erosion and sediment controls, at least once in every two-week period, within 48 hours following any runoff producing storm event, and at the completion of the project, or in accordance with an alternate inspection approved by the State Water Control Board. ESC inspections and the above referenced CGP inspections utilize the C-107 form, Part 1. ESC Inspections conducted under this section must be conducted by DEQ Certified ESC Inspectors.

4.2 INSPECTION PROCESS AND FORMS

CGP and ESC required Inspections are documented using the C-107 form series (Appendix D). Contractors and VDOT personnel (or certified VDOT consultant) perform self-inspections and Part I of the form is co-signed by the ESCCC certified contractor representative and VDOT's designated inspector (DEQ ESC certified inspector). Inspections and observations are verified by a joint inspection between the VDOT representative and the contractor, or an independent inspection by

the VDOT inspector. The VDOT inspector serves for compliance in a dual role, as both the VDOT ESC inspector and as a qualified individual conducting inspections for the CGP. Flowcharts and instructions for the C-107 form Part 1 are contained within the form itself (see pages 4 and 5).

For projects with Construction General Permit (CGP) coverage, the C-107 Part II form serves to document the periodic inspections required of a program authority or annual standard and specification holder. The C-107 Part II form is completed by the Area Construction Engineer or designee and personnel will be certified in SWM inspection in accordance with section 2.1 of this document. An Area Construction Engineer may allow the use of an oversight compliance inspection report conducted by a District NPDES Coordinator or Designee to satisfy the C-107 Part II.

The inspection described in this section are separate from the oversight compliance inspections performed by District NPDES Coordinators or designee, which are discussed in Section 4.3.

4.3 OVERSIGHT COMPLIANCE INSPECTIONS

A separate schedule for "oversight compliance inspections" was developed in response to VDOT's Individual MS4 Permit (VA0092975) requirements under Minimum Control Measure 4. These inspections are differentiated from the routine inspections identified above and are administered by the District NPDES Coordinator or Designee. The oversight compliance inspections are conducted at a minimum frequency of once per quarter and are used for MS4 annual reporting and to improve programmatic compliance. The oversight compliance inspections are documented in a report, with responsibilities further discussed in IIM LD-256 (Appendix H).

4.4 BMP DOCUMENTATION

BMPs implemented for a project will be denoted on the Notice of Termination (NOT) in the appropriate formal for reporting to DEQ. Consistent with the requirements of IIM-LD-195 (Appendix E), Construction record drawings are required for all permanent stormwater management facilities, including approved shop drawings for Manufactured Treatment Devices (MTDs), and shall be appropriately signed and sealed by a person registered in the Commonwealth of Virginia as a professional architect, engineer, land surveyor or landscape architect and qualified in the responsible administration of the BMP construction. The registered professional shall certify that all stormwater management facilities have been constructed and made functional in accordance with the SWM Plan. The form LD-445D shall be used to document this certification process.

After acceptance and NOT, the BMPs are transferred to the control of the VDOT Maintenance Division, entered into the Maintenance BMP Database and managed in accordance with Section 5 of this document.

5. LONG TERM MAINTENANCE

Maintenance for both non-structural and structural BMPs must be in accordance with the VDOT BMP Maintenance Manual and the Virginia Stormwater BMP Clearinghouse specifications. VDOT is required to facilitate maintenance and inspection of all post-construction stormwater BMPs pursuant to 9VAC25-870-112 and 9VAC25-870-200. The VDOT BMP Maintenance Manual provides procedures for how VDOT inspects and maintains stormwater practices to meet these requirements.

Responsibility for the operation and maintenance of stormwater management facilities shall remain with VDOT and shall pass to any successor or owner. If portions of the land are to be sold, legally binding arrangements shall be made to pass the basic responsibility to successors in title. These arrangements shall designate for each state project the property owner, governmental agency, or other legally established entity to be permanently responsible for maintenance.

At a minimum, a stormwater management facility shall be inspected by VDOT on an annual basis and after any storm which causes the capacity of the facility principal spillway to be exceeded. Inspections of BMPs will be in accordance with the VDOT BMP Maintenance Manual.

DEQ may require/request copies of inspections and reports from VDOT to determine if the measures required in the state permit provide effective stormwater management.

Inspection reports shall be maintained as part of the VDOT Maintenance BMP Database.

6. REVISIONS TO THIS DOCUMENT

Revisions to this document and referenced documents will be periodically submitted to the Virginia DEQ for review and approval. Revisions may include periodic updates to minor elements of the standards and specifications, modifications for consistency with changes to laws, regulations and permit requirements, modifications in response to internal or external audits or inspections to improve overall SWM/ESC processes and compliance, or modifications to improve VDOT service delivery and to maintain compliance with MS4 permit and/or other permit programs.

Modifications will typically be submitted to DEQ for review no more than twice per year. Expectations of timeframes for review and implementation of proposed changes will be identified at the time of submittal to DEQ. If 60 days has passed without receipt of comment, VDOT may elect to proceed with implementation of changes and then modify those provisions at a later date if DEQ provides comments or notes concerns after that timeframe.

Updates for submission to DEQ will be categorized into one of two types:

1. Those that only affect VDOT operation and implementation; and
2. Those that affect the administrative and/or technical requirements of the regulations.

Any proposed revisions at VDOT should be submitted for consideration to the L&D MS4 Program Manager for ultimate submission and consideration by DEQ.

Appendix A – IIM LD-258

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Virginia Stormwater Management Program (VPDES Non-VDOT Projects)	NUMBER: IIM-LD-258
SPECIFIC SUBJECT: ESC and Stormwater Roles and Responsibilities for Projects where VDOT is not the Construction General Permit Permittee	DATE: September 10, 2018
	SUPERSEDES: N/A
APPROVAL: Susan H. Keen, P.E. State Location and Design Engineer Approved September 10, 2018	

EFFECTIVE DATE

Unless identified otherwise within this IIM, the information contained in this IIM is effective upon receipt.

1.0 PROGRAM PURPOSE AND NEED

This IIM addresses policy and general information to identify VDOT's Roles and Responsibilities for Erosion & Sediment Control (ESC) and Stormwater Management (SWM) for Non-VDOT Projects such as Locally Administered Projects (LAP), Secondary Street Acceptance Regulations (SSAR) and Subdivision Street Requirements (SSR) developments, Land Use Permit (LUP), out of plan Utility Projects and certain P3 projects for which VDOT is not the Construction General Permit permittee.

This IIM addresses the regulatory requirements as they relate to the roles and responsibilities of entities administering projects where VDOT is not the CGP Permittee.

1.1 VDOT's Stormwater Management Program

The Virginia Stormwater Management Act, the Virginia Stormwater Management Program (VSMP) Regulations, the Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharges of Stormwater from Construction Activities (the Construction Permit) and VDOT's VPDES Individual Permit for Discharge of Stormwater from Municipal Separate Storm Sewer System (MS4 Permit VAR0092975) require that VDOT implement a Stormwater Management program that protects the quality and quantity of state waters from the potential harm of unmanaged stormwater runoff resulting from land-disturbing activities.

This Stormwater Management program includes a post-construction component that protects against the deterioration of the aquatic environment by maintaining certain post-development water quantity and quality runoff characteristics.

Other elements of VDOT's Stormwater Management Program are addressed by the VDOT Drainage Manual and current editions of Instructional and Informational Memoranda.

2.0 PROGRAM ADMINISTRATION (VDOT Annual Standards for ESC and SWM)

Administration of VDOT's Annual ESC and SWM Standards and Specifications (AS&S)

VDOT's Annual ESC and SWM Standards and Specifications (which allow VDOT to self-administer plan review, inspection and program administration) shall apply to all plan design, construction and maintenance activities administered by VDOT and performed either by its internal workforce or contracted to external entities. In certain instances, if approved in advance by DEQ and VDOT (See AS&S Entity Form LD-445I for responsibility of project review, inspection and plan approval), these AS&S (allowing VDOT to administer plan review or inspection) may be applied to other entities administering non-VDOT projects that will be maintained by VDOT as described herein.

VDOT's AS&S are a compilation of VDOT documents related to the design, construction, inspection and maintenance of ESC measures, Pollution Prevention (P2) practices and post-development Best Management Practices (BMP) including, but not limited to, all or a portion of the following:

- Road & Bridge Standards
- Road & Bridge Specifications, Supplemental Specifications and Special Provisions
- Instructional and Informational Memoranda (IIMs)

- Drainage Manual
- Pollution Prevention Field Guide for Construction Activities
- Road Design Manual
- Maintenance Division's BMP Inspection and Maintenance Manuals
- VDOT Standard Details and Special Provisions for Stormwater Management Facilities
- VDOT Virginia Test Methods (VTMs)
- VDOT Construction Manual
- VDOT Land Development Insp. & Doc. Manual

The AS&S and associated documents are dynamic and may be added to, deleted or revised at any time to reflect changes or updates to VDOT's ESC and SWM Program.

Approval to use any portions of VDOT's AS&S on non-VDOT projects/land-disturbing activities (e.g. Locality Administered Projects and Land Use Permit projects - see section 3.1 of this IIM for definition of non-VDOT projects/land disturbing activities) shall be secured from the respective VESCP/VSMP Authority (DEQ or other) and VDOT using Form LD-445I (aka AS&S Entity Form). Requests to use VDOT's AS&S are originated from the land disturbance permittee and are submitted to the District Hydraulic Engineer for review & completion. This form will then be submitted to the Central Office (CO) MS4 contact, which will pursue DEQ's approval. This approval process typically requires 30 days. For non-VDOT projects, the Authority means an authority approved by the State Water Control Board to operate a VESCP or VSMP, and can include the Virginia Department of Environmental Quality (DEQ), a locality, federal entity, another state entity, or linear projects subject to annual standards and specifications. Any approval to use portions of VDOT's AS&S will presumably be part of the VSMP/VESCP Authorities overall plan approval process. For non-VDOT projects for which VDOT will have ultimate O&M responsibilities, consistency with VDOT's technical and design standards is required.

For all projects that are following VDOT's AS&S, compliance is expected.

3.0 DETERMINING A REGULATED LAND DISTURBING ACTIVITY

3.1 Non-VDOT Regulated Land-Disturbing Activities

Non-VDOT projects typically include LAP, LUP, SSAR, SSR, out of plan Utility Projects and other activities which affect VDOT's stormwater system but where VDOT is not the permittee for the VPDES Construction Permit. Furthermore, while VDOT typically self-administers plan review and approval for ESC and SWM in accordance with their AS&S, there may be instances where the ability to review internally is limited by DEQ because VDOT is not the permittee. In these instances, which may affect PPTA/P3 projects and certain design-build projects, those projects must follow the

same review procedures for Non-VDOT Regulated Land Disturbing Activities listed below, and other criteria contained in this document.

The following land-disturbing activities are examples of non-VDOT projects. For the first two categories, VDOT does not have operational and maintenance responsibility for Stormwater Management (SWM) Facilities:

1. Roadway projects occurring on non-VDOT R/W, such as land development streets, industrial access roads, etc., which are designed and constructed by other parties and which meet Secondary Street Acceptance Requirements (SSAR) or Subdivision Street Requirements (SSR) and are eligible for acceptance into the state roadway system for operations and/or maintenance by VDOT after completion of construction and VDOT acceptance. VDOT does not have operational and maintenance responsibility for Stormwater Management (SWM) Facilities

2. Land-disturbing activities occurring within the existing R/W of VDOT owned and/or operated roadway facilities that are a part of an offsite development and which are allowed by agreement and/or the issuance of a VDOT Land Use Permit and which are designed and constructed by other parties. Such land-disturbing activities shall be considered a part of an overall offsite development plan (i.e., common plan of development) and any SWM requirements for areas inside of VDOT R/W shall be accounted for in the SWM Plan for the offsite development. An example project would be the addition of a turning lane (with pavement widening) to service a private development or subdivision and would require the issuance of a Land Use Permit. VDOT does not have operational and maintenance responsibility for Stormwater Management (SWM) Facilities

3. Projects involving roadways that are owned and/or operated by VDOT and which include land-disturbing activities occurring inside and/or outside of existing R/W and which are funded by VDOT transportation revenue but whose construction contracts are administered by Federal Agencies, other State Agencies or localities (County, City or Town) and which will be operated and/or maintained by VDOT after completion of construction. An example project would be an interchange improvement in a VDOT R/W leading into a federal installation that is administered by Eastern Federal Land, a division of the Federal Highway Department or a Locally Administered Project.

4. Other Projects such as P3 projects, may be required to design to all VDOT technical SWM and ESC criteria (in accordance with IIM 195 and the VDOT Drainage Manual), but the permittee may be a separate entity from VDOT, and therefore the permittee may be responsible for securing review and approval of ESC and SWM from the DEQ, and be responsible for permit compliance and inspections.

For these projects, the ESC and SWM plan review, approval and project inspection is the responsibility of the VESCP/VSMP Authority (or DEQ). VDOT may be the plan approval authority if it is documented in the contract or signed in an agreement. The District Hydraulic Engineer shall receive a copy of the plan(s) submittal, and may assist in the review and approval of certain non-VDOT projects when the project ultimately affects VDOT's R/W, SWM system, or other assets/responsibilities. This review process should occur prior to the issuance of a Land Use Permit including sufficient time to adequately review and comment. Those activities found not to comply with the requirements of the VSMP regulations, VDOT's MS4 Permit, or an approved TMDL, shall not be issued a Land Use Permit, nor be accepted into the state system of roadways, until such compliance is demonstrated to the satisfaction of the District Hydraulic Engineer.

For these projects that impact VDOT's R/W, SWM system, or other assets/responsibilities, the project's plans shall document how and where the SWM is being accomplished. This information shall be transmitted to VDOT via the appropriate form(s) (e.g. LD-445D form for VDOT-maintained SWM facilities), along with the complete SWM submission including appropriate plan sheets, report and computations, and provided to the District Hydraulics Engineer. The design and construction information for any outfalls and BMPs accepted by VDOT for operation and maintenance shall be documented by the LPA (Locality Project Manager) and forwarded to the applicable District Infrastructure Manager and the District Hydraulics Engineer for BMP acceptance and inclusion in the respective VDOT outfall and BMP databases. This information is to be retained with the appropriate file(s) in the applicable VDOT District or Residency Office, until such time that it is no longer valid.

3.2 Determining and Documenting Stormwater Management Operation and Maintenance Responsibility for Non-VDOT Projects

The following categories describe typical new non-VDOT projects and the associated review and maintenance responsibilities of SWM Facilities that VDOT will accept.

1. *Not located within current VDOT R/W, locally (e.g. City) or privately-owned and maintained and not seeking VDOT acceptance. An example may be a City LAP project where acceptance of the roadway and SWM facilities is NOT sought.* Hydraulic review is not expected as <u>VDOT will have no SWM Facility maintenance responsibility</u>.

2. *Not located within current VDOT R/W, seeking acceptance into the Secondary Highway System; or Improvements in current VDOT R/W related to offsite development; or Improvements to the current VDOT R/W with no operational or safety improvements. (e.g. construction of new secondary street, beautification projects, road improvement for economic development, drainage improvements unless there are improvements to the safety of traveling public)* – <u>VDOT will not be responsible for Operation and Maintenance of SWM Facilities</u>. Design plans must show easement limits for proposed facilities with descriptor indicating

maintenance responsibility. Maintenance agreement between project proponent and the VSMP Authority shall be required. SWM Facilities shall be located outside the R/W. District hydraulic review may be required. VDOT must be provided a copy of the complete SWM submission including appropriate plan sheets, computations and documentation and proof of the recorded instrument.

3. *Improvements to current VDOT R/W with operational and safety improvements (e. g. improved intersection)* – VDOT may, at its discretion and if agreed to in writing, assume Operation and Maintenance Responsibilities for SWM facilities treating the VDOT R/W and permanent easement only. VDOT maintained facilities must typically be located in permanent VDOT easements or R/W. An example may be County LAP project where acceptance of the roadway and SWM facilities located within the R/W by VDOT will be sought. District hydraulic review is required and should be performed during the plan development process.

4.0 LOCALLY ADMINISTERED PROJECTS (LAP), LUP, SSAR, SSR

During planning and Design Development processes there are several important considerations that must be made by the Local Public Agency (LPA) with regard to hydraulics, the VSMP regulations, and VDOTs MS4 permit. First, the LPA is responsible for all VSMP permitting and permit compliance for the project. This includes the preparation, facilitation, and maintenance of the Stormwater Pollution Prevention Plan (SWPPP) for the project. The SWPPP shall be included in the Design Package submittal to the LPA Project Manager. LPA's should be advised that individual project schedules and approvals may be impacted by the local VSMP authority (or DEQ when acting as the VSMP Authority). As such, these factors should be well understood in relation to critical path milestones and properly considered within the project delivery schedule.

LPA developed design documents must properly denote the land cover changes within the VDOT R/W and permanent easements (including disturbed acreage, impervious cover, forest/open space, and turf acreages). Note that plans developed for approval by the VSMP Authority are still subject to VDOT review for project congruence with applicable VDOT standards and ultimate VDOT acceptance. Insufficient plan information in this regard, may require plan revision independent of the local VSMP Authority review. As such, it is recommended that the LPA coordinate closely throughout design development with the local VSMP Authority and VDOT staff so that design issues may be coordinated early and resolved through reasonable course of the local District's design review. The LPA is responsible for documenting VDOT MS4/Stormwater information at design package submittal through the completion of the *LPA Design Package – VDOT MS4/SWM Program Checklist*. Prior to project advertisement and/or acceptance, additional information and verification of stormwater

compliance is required with the LPA's completion of the *LPA Project Certification – VDOT MS4/SWM Program Checklist* and VDOT will review submittal information prior to final acceptance. See Appendix 12.6B in Chapter 12 of the Locally Administered Projects (LAP) Manual for additional information.

LUP projects shall be reviewed and approved by the District Hydraulic Engineer and performed during the plan development process, if the project will be constructed within VDOT's right-of-way and will be accepted into the state Highway Systems.

For all projects to be maintained by VDOT, regardless of funding, the following are of critical importance to the VDOT's MS4 permit compliance:

1. Post-construction stormwater best management practice (BMP) facilities installed or modified, including:
    a. New structural BMP facilities being installed;
    b. Existing structural BMP facilities removed, modified, or retrofitted or land cover acreage or composition within the BMP contributing drainage areas modified;
    c. Additional non-structural water quality practices or measures installed or affected.
2. Location and Inventory of Outfalls within Project Limits, including:
    a. New outfalls being added to the system;
    b. Relocation, removal, or modification of existing outfalls;
    c. Confirmation of existing outfalls that remain unchanged.
3. Nutrient Credit Purchases transacted for project compliance
4. Redevelopment project calculations showing the net reductions associated with the redevelopment component of the project.
5. Documentation and Apportionment of Pollutant Reductions.
6. Sealed and signed SWM and Drainage Report that document the proposed design; and
7. Construction record drawing information for any facilities which VDOT will maintain.

The following provides a brief overview of the LPA's (Local Public Agencies Project Manager) requirements with regard to these five items.

4.1 Stormwater Management BMPs

While projects are required to comply with local VSMP authority requirements, they are also required to abide by VDOT standard drawings and details, specifications, Stormwater BMP standards and special provisions, as appropriate, for all Stormwater Management Facilities that will fall under the operation and maintenance of VDOT after project completion (i.e. either located within the current or future VDOT R/W or VDOT easements).

LPA's shall denote all SWM facilities used to address land cover changes within the VDOT R/W and permanent easements and the extent to which any water quality credits are apportioned to the improvements in the VDOT R/W. VDOT requires this information for MS4 permit compliance purposes. Credits for new water quality improvements serving/treating the R/W shall be negotiated during the design process and apportioned to VDOT using the LD-458 form. Examples of when credit shall typically be allocated to VDOT include: Water quality improvements and associated TMDL credits resulting from BMPs that will be maintained by VDOT and; credits associated with treatment of VDOT R/W or permanent easements from BMPs that are not maintained by VDOT.

LPA's must provide documentation (maintenance agreements, etc.) required by the VSMP Authority for all non-VDOT maintained Stormwater Management facilities serving improvements in VDOT's R/W or permanent easements. For facilities which are located in VDOT R/W and are not maintained by VDOT, an executed copy of the agreement for *STORMWATER DEVICE LOCATED WITHIN VDOT RIGHT-OF-WAY* shall be provided to the VDOT Project Coordinator (PC). The agreement can be located within the Secondary Street Acceptance Requirements Guidance Document or by contacting the VDOT Residency.

Design of facilities to be maintained by VDOT (see section 3 -3.2) must appropriately consider maintenance, including access to the BMP location, which has been designed consistent with both VDOT guidance, standards, specifications, special provisions, and with periodic reviews during installation and final BMP acceptance of the District Maintenance and District Hydraulic Engineers.

The LPA shall be responsible for coordinating final acceptance of any SWM facilities which will be maintained by VDOT, which includes a final acceptance inspection by the Maintenance Division and the District NPDES Coordinator. At such time Maintenance Division staff will assign a unique VDOT BMP Maintenance identification number to be noted on the final LD-445D form.

For Stormwater Management Facilities to be maintained by VDOT, LPAs must submit a completed LD-445D form to the VDOT Project Coordinator (PC), along with Stormwater Management Facilities construction record drawings and certifications that the Stormwater Management Facilities were constructed in accordance with the plans. Record drawings and certifications, as outlined in Form LD-445D, must be provided to the satisfaction of both VDOT and the VSMP Authority. As part of this process, the LPA is responsible for coordination with the VDOT Construction Project Monitor (CPM) and VDOT District staff for inspections of facilities during construction. This may include inspections at critical construction milestones and must include a final acceptance inspection (See Section 8.3 of IIM LD-195). The LPA will be responsible for documenting record drawings, certifications, inspections and acceptance, and completing the LD445D form and signifying as such under the *LPA Project Certification – VDOT MS4/SWM Program Checklist*.

4.2 Outfall Identification and Inventory

VDOT is required to identify and inventory the regulated outfalls within its MS4 regulated area for MS4 permit compliance. Verification of the projects proximity to VDOT's MS4 regulated area shall be coordinated with the District Hydraulic Engineer. New outfalls will continually be added to the inventory through the LAP program, LUP, Secondary Street Acceptance Program, or other roadway plans for projects, and maintenance activities. It is necessary to capture these outfalls upon completion of those activities to ensure appropriate documentation. As such, these projects must aid in this process both during design development as a best practice in early identification, and most importantly, at project acceptance to account for as-built conditions. Design plans within VDOT's right-of-way (including LUP projects) must clearly identify new outfalls and points of interconnectedness with adjacent MS4s, and the LPA must, to the extent practicable, provide pertinent outfall information in the appropriate Outfall Inventory Field Sheet(s) (See Section 7.0 FORMS) within the design plan documents (the forms must be initiated during the design stage and completed prior to project acceptance). The *VDOT Location and Design Division's MS4 Stormwater Outfall Inventory Manual may serve as a useful reference for completion of these forms*. Completion of this information shall be verified on the *LPA Design Package – VDOT MS4/SWM Program Checklist*, which shall accompany the LPA's Design Package Submittal. Completion of this checklist shall be accomplished by the LPA prior to completion of the LAP 402A form for Certification of Documents. See Appendix 12.6B in Chapter 12 of the LAP Manual for additional information.

All outfall inventory and inventory updates must be performed and documented and transmitted to the LPA Project Manager. Following construction, the LPA is responsible for providing this data through submittal of completed *Outfall Inventory Field Sheets* (See Section 7.0 - FORMS) for all applicable outfalls to the Department. Additionally, this shall be indicated as complete on the *LPA Project Certification – VDOT MS4/SWM Program Checklist (See Chapter 14 of the LAP Manual for additional information)* and the Department will verify submittal information prior to final acceptance and final billing. The *VDOT Location and Design Division's MS4 Stormwater Outfall Inventory Manual* may serve as a useful reference for completion of this form.

4.3 Nutrient Credit Purchases

The purchase of nutrient credits to address post-construction water quality reduction requirements for construction activities shall be considered the preferred alternative when available and economically feasible. Projects may obtain nutrient credits for water quality compliance through purchases, if allowed by regulation and as determined by the LPA and/or design engineer. Credits and pollutant reductions serving or offsetting improvements in the R/W must be transferred to VDOT at the acceptance of the project for VDOT's record-keeping purposes.

If an LPA desires to utilize the purchase of certified nutrient credits, they should contact the VDOT Project Coordinator (PC), who will work internally with the District Hydraulic Engineer and the State MS4 Engineer at VDOT Central Office. VDOT may be able to assist in purchasing nutrient credits/offsets through statewide contract vehicles (with charges apportioned to the LPA or project). The LPA is responsible for a pre-evaluation to ensure no existing water quality based limitations are in place within the project watershed(s) which may prohibit the use of nutrient credits. The LPA is also responsible for ensuring that credits are available for use within the same or adjacent HUC. This pre-evaluation must be documented, and coordinated with, the District Hydraulic Engineer early in the planning process. Specific options for the use of nutrient credit purchase include:

1) Preferred Option: VDOT Central Office may purchase the nutrient credits directly on behalf of the project using an established VDOT nutrient credit contract. The LPA PM or District Hydraulic Engineer will supply the State MS4 Engineer at VDOT Central Office with a UPC to purchase the credits. If this option is intended to be utilized, the LPA should coordinate with the District Hydraulic Engineer and Central Office prior to the Public Hearing milestone. See IIM-LD-251(most current version) - “Application of the VSMP Regulations as it relates to utilization of the Nutrient Credits as an off-site compliance option”. At design completion, coordination of the purchase of nutrient credits through Central Office shall be performed by the LPA using the LD-453 form.

2) Alternative Option: The LPA may purchase the nutrient credits required for the project directly and transfer the credits into VDOT’s name using the NUTRIENT CREDIT ASSIGNMENT AGREEMENT form. See IIM-LD-251 (most current version) for additional information. VDOT will also require the nutrient credit affidavit and bill of sale to document the nutrient credit purchase, and require that the nitrogen and sediment credits associated with the phosphorus credit purchase be encumbered and allocated. Should this option be selected by the LPA, the pre-evaluation must be supplied to the District Hydraulic Engineer for review, prior to purchase of credits. It is strongly advised that the LPA have familiarity with the nutrient credit acquisition process, or have an existing contract vehicle in place. Unless the LPA maintains an existing purchase mechanism through a nutrient banker, it is likely that the LPA’s Legal Counsel will require negotiation, review, and approval of the nutrient credit purchase agreement terms. This can result in unexpected delays to the purchase and potentially the overall project schedule. As such, these timelines and coordination, necessary prior to construction, must be considered in project schedule planning.

4.4 Redevelopment Projects

Redevelopment projects designed under VSMP Part IIC or Part IIB realize reductions from existing lands between 10% and 20%. For BMP facilities that will be maintained by VDOT or BMPs that treat VDOT lands, the water quality computations for the project shall be submitted prior to Stormwater Management Facility acceptance and transfer. The VDOT Hydraulics Redevelopment/Surplus Credit Tracking Form LD-458 and the applicable water quality calculations (e.g. Runoff Reduction Method Spreadsheets) shall be completed and provided to the VDOT. Credit for net reductions from redevelopment areas will be claimed by VDOT for MS4 permit TMDL Special Condition compliance purposes in accordance with funding commitment and long-term O&M responsibilities.

4.5 SWM Facility Crediting and Additional Pollutant Reductions Achieved Above and Beyond the Minimum Required

The reductions and credit associated with the installation of SWM Facilities, and other creditable practices, implemented for VSMP project compliance that will treat roadways and R/W lands that will be accepted into VDOT system will carry over to and be utilized by VDOT for MS4 and TMDL purposes, regardless of the entity that maintains the facility.

It may be possible to achieve additional pollutant reductions through the exceedance of VSMP water quality minimum treatment requirements onsite. This may occur through the installation of SWM retrofits, the additional treatment of land outside of the R/W or project area, or exceedance of minimum overall project load reduction requirements, among other mechanisms. Should this be the case for activities implemented in areas under VDOT's long-term O&M, the LPA, LUP, SSAR, SSR or other project type Project Manager proponent shall quantify and document the credit yield for these activities (for VDOT to utilize in MS4 and TMDL crediting).

In these instances, the LPA, LUP, SSAR, SSR or other project type Project Manager proponent shall be responsible for documenting surplus credits (amount of pollutant reductions that are achieved above and beyond the minimum required by the CGP), providing documentation of such credits to VDOT on Form LD-458, including attachments and supporting documentation for the credit surplus, and for completing the LPA Project Certification – VDOT MS4/SWM Program Checklist.

Projects may also involve stream channel restoration and/or relocation aspects or land use modifications from developed area to passive or open space which may be of value to both the local community and VDOT. VDOT's MS4 program may have goals in common with local MS4 permittees. LPAs are encouraged to communicate issues or items in this regard to VDOT's State MS4 Stormwater Engineer as soon as they become evident within the scoping or plan development processes as they may be of value, particularly for cost optimization, to the LPA and the Department.

Locally Administered Project Manual. Chapter 12, Appendix
LPA Design Package – VDOT MS4/SWM Program Checklist

Locally Administered Projects Manual. Chapter 14, Appendix
LPA Project Certification – VDOT MS4/SWM Program Checklist
http://www.virginiadot.org/business/locally_administered_projects_manual.asp

Secondary Street Acceptance Requirements (SSAR)
Land Use Permits Program

4.6 Utility Projects – VPDES General Permit Coverage Responsibility Requirements

Project utility improvements (in-plan utilities – water, sewer, gas relocations that will be constructed within the right-of-way or construction limits of the VDOT project, and performed concurrently with the project, will have (VPDES) General Permit for Discharges of Stormwater from Construction Activities coverage under the VDOT roadway improvement project permit.

Project utility improvements (out-of-plan utilities – relocation of power, communications, etc.) to be constructed outside the right-of-way or construction limits of the VDOT projects will be required to obtain separate (VPDES) General Permit for Discharges of Stormwater from Construction Activities (the Construction Permit) permit coverage for their utility installation activity. It will be the responsibility of the Utility Contractors to obtain this separate permit coverage for this utility installation activity from the VSMP Authority.

5.0 ESC/SWM PLAN REVIEW AND APPROVAL

ESC/SWM Plan Review and Approval is the responsibility of the local VSMP Authority or DEQ.

6.0 DATA TRANSFER AND BMP RECORD DRAWINGS

Prior to final billing, the LPA shall provide the completed LPA Project Certification - VDOT MS4/SWM Program Checklist. For any permanent post-construction facilities in which VDOT will assume long-term operation and maintenance responsibilities, the LPA shall also furnish to the LAP Project Manager a copy of the record drawing that is required by the acting VSMP Authority and a copy of the professional certification that the BMP was constructed in accordance with the plans. The LAP Project Manager shall upload copies of plans, nutrient credit documentation (consistent with IIM-LD-251), construction record drawings and reports to ProjectWise (formerly FALCON) for long-term documentation. VDOT reserves the right to require a record drawing using its latest version of the special provision entitled “Construction Record Documentation of Permanent Stormwater Management Facilities.” Failure to provide completed certifications and documentation may delay payment.

7.0 FORMS

The Outfall Inventory form referenced herein is provided as an attachment to this document.

OUTFALLINVENTORY FIELD SHEET

Outfall Inventory

Section 1: Team Data

Investigators:	Today's date:	
Rainfall (in.): Last 24 hours: Last 48 hours:	Temperature (°F):	iPad Unit:

Investigators:	Team ID:	
Today's date:	Rainfall (in.): Last 24 hours: Last 48 hours:	
Temperature (°F):	GPS Unit:	GPS SN or ID:
Camera:	Camera SN or ID:	

Section 2: Background Data (Grayed out areas are determined as part of process and does not required direct entry)

Outfall ID:			
Subwatershed: (Determined by GIS location and not Field Entry)		Latitude:	Longitude:
Photo #s: Note: Photo is taken and then attached to each Outfall and POD as part of the Processing and the Investigator does not need to separately record Photo No.	MS4 Outfall or POD: MS4 Outfall POD (Point of Discharge) NOF (No Outfall Found) UTW (Unable To Work – Please add Note) For POD: ID of County Structure Is POD a MS4 Interconnection (YES/No)[3] ID of County Outfall	Notes (e.g.., origin of outfall, if known such as SWM Basin):	

Land Use in Drainage Area (Check Predominate Use or add Multiple under Other):

☐ VDOT

☐ Industrial

☐ Ultra-Urban Residential

☐ Suburban Residential

☐ Commercial

☐ Open Space

☐ Institutional

Other: _____

_____

Known Industries: _____

_____

Inventory Review Reason (Outfall Survey, QA/QC, IDDE, TMDL)___USACE Default to **Phase I MS4**_____

MS4 Outfall Notes:

1 Because of IDDE call in and referrals not all outfalls inventories will be in MS4 area. VDOT is logging all outfalls into a wetland, water body or stream on VDOT R/W as VDOT outfall. County Tax plats will be imported to assist in the R/W determination but it will be assumed that VDOT has a drainage easement to go around the end of any pipe culvert or box culvert accepted for maintenance. A discharge point cannot be both a MS4 outfall and a POD.

2 If VDOT discharges stormwater inside of a targeted area of MS4 investigation and the discharge is not directly into the wetland, water body or stream on VDOT R/W the point will be captured as a Point of Discharge (POD and the inventory and assessment completed.

3 If the POD is into a ditch, paved ditch or pipe then the POD is also a MS4 Interconnection (MS4 I). If the POD is into a flood plain or natural swale then the POD is not also a MS4 I.

Section 3: Outfall Description

LOCATION	MATERIAL	SHAPE	NO. OF PIPES	DIMENSIONS (IN.)	SUBMERGED
☐ **Closed Pipe**	☐ RCP ☐ CMP ☐ PVC ☐ HDPE ☐ Steel ☐ Other: _____	☐ Circular ☐ Elliptical ☐ Box ☐ Other: _____	☐ Single ☐ Double ☐ Triple ☐ Other: _____	Diameter: _____ Or Width: _____ Height : _____	In Water: ☐ No ☐ Partially ☐ Fully

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)
☐ **Open drainage**	☐ Concrete ☐ Earthen ☐ rip-rap ☐ Other: _____	☐ Trapezoid ☐ Parabolic ☐ V shaped ditch ☐ Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)
☐ Drop Inlet	☐ Curb Inlet ☐ Curb Inlet with Grate	Measure Slot – Grate area will not be measured	Height: _____ Width: _____
	☐ Flat DI	☐ Square or Rectangular	Length: _____ Width: _____
		☐ Circular	Diameter: _____
	☐ DI in V Ditch	Measure Grate Area	Length: _____ Width: _____
	☐ Other: _____		

☐ VDOT Right of Way ☐ Mixed VDOT and Other Sources ☐ Other Sources

Section 4: Dry Weather Survey

Complete Dry Weather Survey Today	☐ Yes	☐ No	
Flow Present?	☐ Yes	☐ No	***If No, Skip to Section 6***
Flow Description (**If present)**	☐ Trickle	☐ Moderate	☐ Substantial

SECTION 5: PHYSICAL INDICATORS FOR FLOWING OUTFALLS ONLY

Are Any Physical Indicators Present in the flow? ☐ Yes ☐ No (*If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -**Does Not Include Trash!!**	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; origin not obvious	☐ 2 – Some; indications of origin (e.g., possible suds or oil sheen)	☐ 3 - Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 6: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No (*If No, Skip to Section 7)*

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Deposits/Stains	☐	☐ Oily ☐ Flow Line of pipe or ditch ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Suds ☐ Excessive Algae ☐ Other: Sheen ☐ Petroleum Sheen ☐ Organic Sheen	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	
Sediment accumulation[1]	☐	☐ ¼ full ☐ ½ full ☐ ¾ full ☐ full ☐ Other:	

Notes: [1] – If the sediment appears to be as a result from the erosion or scouring within the storm sewer system complete sections 8, 9, and 10 of this form.

Section 7: Overall Outfall IDDE Characterization

An IDDE score will be calculated by summing the Severity Indexes in section 5 and adding the number of indicators checked as present in section 6

☐ **Unlikely** (No indicator checked as present in Section 5 OR only **one (1)** indicator checked as present in Section 6)

☐ **Potential – (**one (1) indicator with a severity of **one (1)** in Section 5 OR **two (2)** indicators checked as present in Section 6)

☐ **Suspect - IDDE score of Three (3)** (one or more indicators checked in Section 5 with a total of severities equal to three (**3)** OR **more than two (2)** indicators checked as present in Section 6 OR a total of severities in Section 5 plus indicators checked as present in Section 6 is equal to three (3))

☐ **Obvious – IDDE score of greater than Three (3)** (one or more indicators checked in Section 5 with and the total of the severities **is greater than three (3)** OR a total of severities in Section 5 plus indicators checked as present in Section 6 **is greater than three (3))**

IDDE **Notes:**
_____

Inspectors Overall Outfall Characterization: Unlikely, Potential, Suspect, Obvious

Reason for Override: if different from IDDE scoring_____

Section 8: Outfall Channel Field Concerns

Concerns	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)	COMMENTS
Channel blocked*	☐	☐ Overgrown vegetation ☐ Debris ☐ Sediment accumulation ☐ Other	☐ 1- ¼ blocked ☐ 2- ½ blocked ☐ 3 -¾ or more blocked	
Channel Erosion occurring*	☐	☐ Damaged paved ditch or riprap channel ☐ At immediate downstream banks ☐ At discharge of outfall (depression/pooling) ☐ Beneath or around pipe ☐ Other:	☐ 1- Minor ☐ 2- Moderate ☐ 3- Major	
Outfall Damage	☐	☐ Cracked pipe ☐ Crushed pipe ☐ Rusting or corroded pipe ☐ End wall damage ☐ Pipe disconnected from end wall ☐ Peeling paint ☐ Other: ☐ Cracked/displaced or eroded Paved Ditch ☐ Riprap ditch has failed ☐ Erosion Control Blanket lined ditch has failed ☐ Vegetative ditch has failed	☐ 1 – Monitor ☐ 2- Flow constricted due to damage ☐ 3 -Safety concern	

* Channel inspection to include downstream channel within immediate vicinity of outfall

Section 9: Outfall Channel Rating

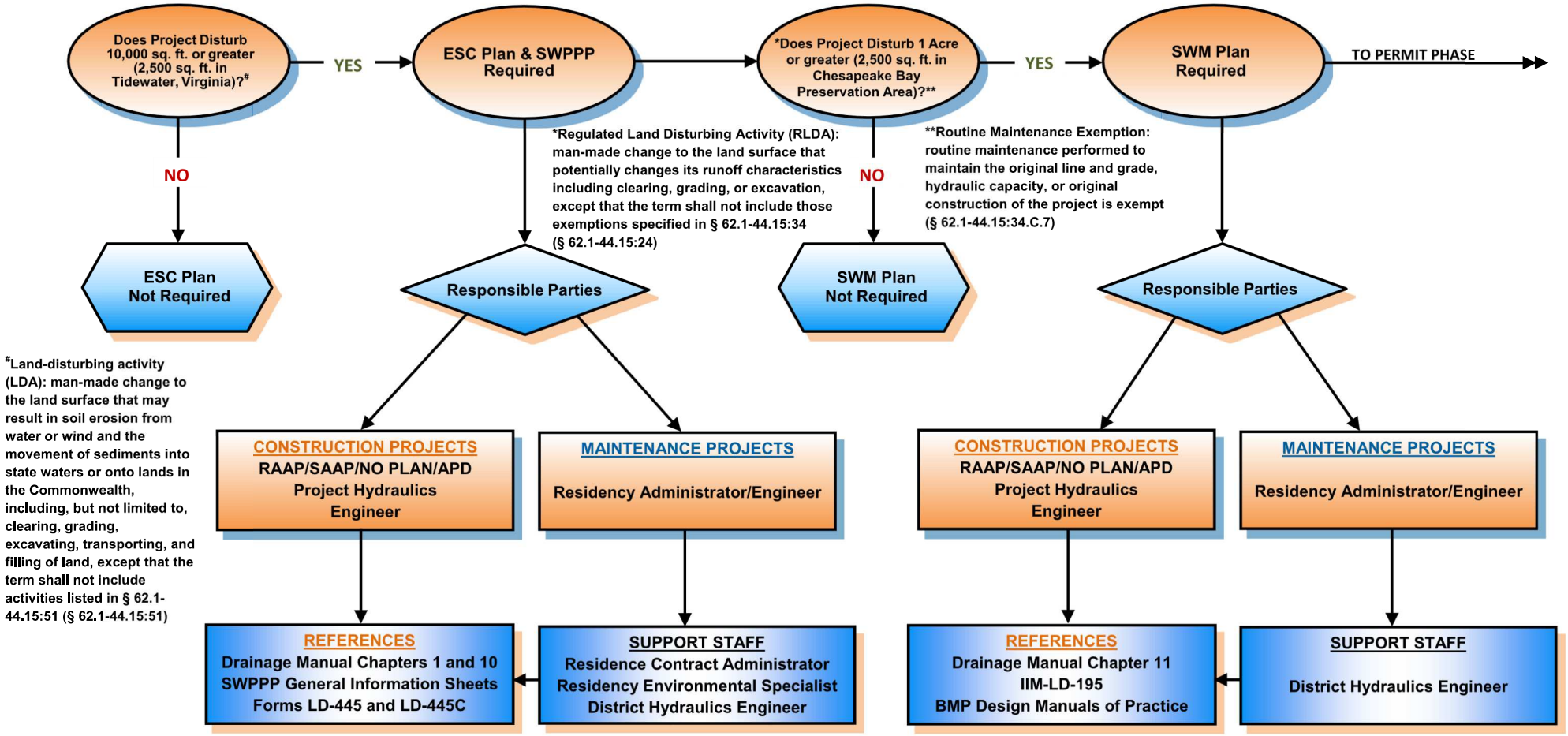
☐ **No Maintenance Required** - No concerns indicated
☐ Monitor - Presence of one or more indicators with a severity of 1
☐ Review - One or more indicators with a severity of 3 or two or more with a severity of 2
☐ Repair – Two or more indicators with a severity of 3 or a safety concern noted

Section10: Any Non-Illicit Discharge Concerns

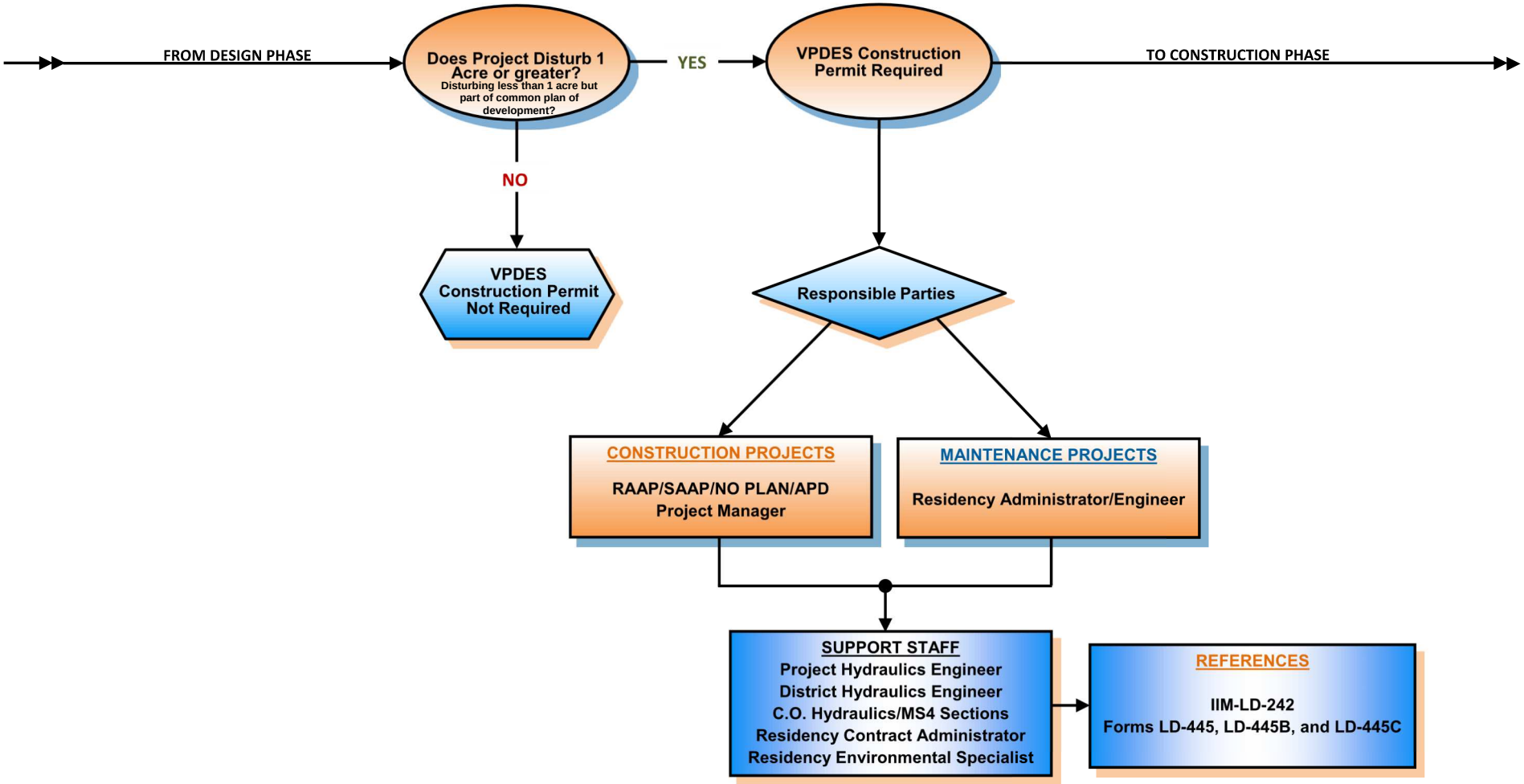
Appendix B – ESC/SWM Requirements Flowchart

STORMWATER PROGRAM - ESC, SWM, VPDES CONSTRUCTION PERMIT REQUIREMENTS

Plan Design Phase - For Construction and Maintenance Activities

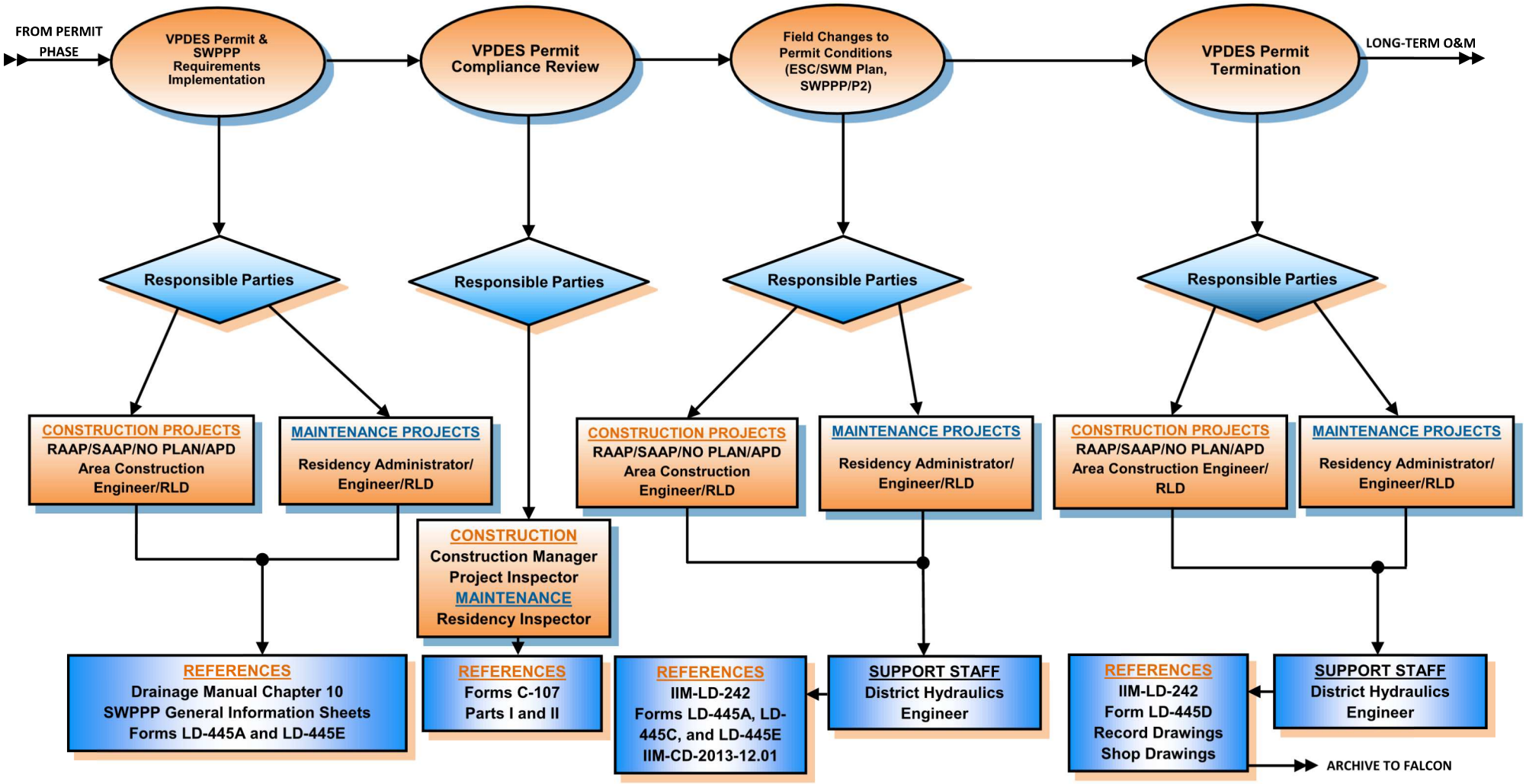


VPDES Construction Permit Phase - For Construction and Maintenance Activities



STORMWATER PROGRAM - ESC, SWM, VPDES CONSTRUCTION PERMIT REQUIREMENTS

Construction Phase - For Construction and Maintenance RLD Activities



Appendix C – IIM LD-242

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Virginia Stormwater Management Program, VPDES Construction General Permit	NUMBER: IIM-LD-242.8
SPECIFIC SUBJECT: VPDES Construction General Permit Acquisition and Administration for VDOT Projects	DATE: DRAFT
	SUPERSEDES: IIM-LD-242.7
APPROVAL:	Susan H. Keen, P.E. State Location and Design Engineer Approved _____, 2021

Changes have been shaded

CURRENT REVISION

- Revisions have been made throughout this memorandum to update and clarify the Construction General Permit Acquisition and Administration requirements for VDOT Projects.
- Refer to VDOT Drainage Manual (Chapter 1) for applicable definitions and abbreviations.

EFFECTIVE DATE

- Unless identified otherwise within this IIM, the information contained in this IIM is effective upon receipt.

1.0 BACKGROUND

1.1 Acts of the General Assembly have resulted in the enactment of the Stormwater Management Act (Section 62.1-44.15:24 et seq. of the Code of Virginia) and the issuance of the Virginia Stormwater Management Program Regulation (9 VAC 25-870-10 et seq.) for discharges of stormwater from Regulated Land Disturbing Activities. The law empowers the State Water Control Board (SWCB) to regulate, permit, and control stormwater runoff in the Commonwealth and authorizes the SWCB to delegate such powers to DEQ.

DRAFT

1.2 Authorization to discharge stormwater from construction activities under the VSMP Regulation and the Virginia Stormwater Management Act is permitted through DEQ's General VPDES Permit for Discharges of Stormwater from Construction Activities VAR10 (hereafter referred to as the Construction General Permit or CGP). This IIM addresses the conditions and requirements within the permit that is effective July 1, 2019 to June 30, 2024. Except for emergency related activities, coverage under the Construction General Permit must be obtained prior to beginning any land disturbance on regulated activities.

1.3 Activities that meet the Virginia statutory or regulatory definition of a Regulated Land Disturbing Activity (RLDA), but do not require coverage under the Construction General Permit (Non-CGP), shall be reported as discussed in section 9.0. Examples of Non-CGP RLDAs to be reported include: projects regulated under the Virginia Erosion and Sediment Control Program (VESCP), but disturb less than 1-acre; routine maintenance activities that are regulated under the VESCP, but not the VSMP or CGP; and Chesapeake Bay Preservation Act (CBPA) Land Disturbing Activities (LDA) that are less than 1-acre. This includes construction, maintenance, environmental, and Capital Outlay activities that are RLDAs with VDOT as the owner or operator.

2.0 APPLICATION

2.1 The Construction General Permit is applicable for all RLDAs undertaken by or for VDOT including projects developed under the Design Build process, Capital Outlay projects and non-routine maintenance activities, including those performed by state or contracted forces. For the purposes of this IIM, the RLDA is defined as the proposed construction or maintenance related land-disturbing project or activity that generates the need for acquiring coverage under the Construction General Permit.

2.2 In accordance with the instructions contained in this document, VDOT shall apply for and secure coverage under the Construction General Permit for all applicable land-disturbing activities over which it has contractual control, or which are done by state forces. This includes any support facilities located within the VDOT right-of-way (R/W) or easement.

2.3 It shall be the responsibility of those conducting land-disturbing activities on VDOT R/W or easement under agreement and/or a land use permit to secure coverage under the Construction General Permit for their activities (if applicable). This includes, but is not limited to, those land-disturbing activities conducted on VDOT R/W or easement by municipalities under the Urban Construction Initiative Program, the Locally Administered Project Program and the Transportation Enhancement Program. Requirements for non-VDOT projects are further addressed in IIM-LD-258.

2.4 Except for land-disturbing activities associated with routine maintenance operations, coverage under the Construction General Permit is required for all land-disturbing activities that equal or exceed one acre in size. Projects which are less than 1 acre of disturbance individually, but which are part of a larger common plan of development

(with cumulative disturbance exceeding 1 acre) are also required to obtain coverage under the Construct General Permit.

2.4.1 Each individual construction contract containing land disturbances requiring Construction General Permit coverage shall have only one Construction General Permit number.

2.4.2 Applying the provisions of section 2.4.1 of this IIM could result in one of the following situations:

1. A UPC/project number having more than one Construction General Permit registration number. When this occurs, care should be taken to make sure each individual permitted site included under one UPC/project number has a distinct designation that is clearly identifiable in the construction plans or other such documents and the permit registration packet. Where general SWPPP information is the same, it will not be necessary to duplicate such information in SWPPP General Information Sheet notes in the construction plans or other such documents for each individual site.

   However, where site specific information is required in the SWPPP General Information Sheets notes (e.g., project location, land disturbance values, receiving waters, etc.), such information is to be identified for each individual site.

2. One Construction General Permit number applying to multiple UPC/project numbers. Where multiple UPC/project numbers are to be covered under one permit application, the LD-445 and other applicable forms should list one UPC/project number associated with the project.

2.5 Routine maintenance activities are exempt from the VSMP Regulation and Construction General Permit coverage regardless of the amount of land disturbance. ESC and SWPPP requirements may still apply dependent on the extent of land disturbance. Routine Maintenance is further discussed in Section 3.3 of IIM-LD-195.

3.0 TOTAL LAND AREA OF DEVELOPMENT, PRIMARY ESTIMATED AREA TO BE DISTURBED ONSITE, AND OFFSITE AREA TO BE DISTURBED

3.1 The application for coverage under the Construction General Permit requires the reporting of both the Total Land Area of Development and the Primary Estimated Area to be Disturbed Onsite as outlined in form LD-445. The Offsite Area to be Disturbed must also be reported, if applicable (see Section 3.1.3).

3.1.1 The Total Land Area of Development is the total VDOT owned/controlled area, within the project limits and identified in the Stormwater Management (SWM) Plan, utilized in the determination of the RLDA's post-development water quality requirements. The Total Land Area of Development (also known as the "Site" or "Regulated Site", see VDM Appendix 1A-1 and Chapter 11, Section 11.4.1.2(a)) would, typically, include areas such as the right of way and temporary and permanent easements, including that for any areas for support facilities identified and included as a part of the construction plans or other such documents and the registration information for Construction General Permit coverage for the RLDA.

3.1.2 The Primary Estimated Area to be Disturbed Onsite is the total area onsite that will be disturbed by the proposed activities. Land disturbance, for the purposes of applicability of the VSMP Regulation and the Construction General Permit, is defined as any manmade change to the land surface that potentially changes its runoff characteristics including any clearing, grading or excavation associated with the proposed activity. The Primary Estimated Area to be Disturbed Onsite should be the onsite area used in the ESC plan determined using the methodology in the VDOT Drainage Manual (see VDM Chapter 10, Section 10.3.1.2), and shown in the construction plans as the Limits of Disturbance (LOD) and the registration information for Construction General Permit coverage for the RLDA.

3.1.3 The Offsite Area to be Disturbed is the total offsite area reported if it is to be covered under the same Construction General Permit as the project. Offsite areas to be covered separately from the project are not reported with the form LD-445 for the project.

3.1.4 Once Construction General Permit coverage has been received, changes to the identified area of land disturbance within the identified area of land development can be made with a permit modification. If the land disturbance extends into a higher permit fee bracket (i.e. goes from less than 5 acres to 5 acres or greater) the difference between the original permit fee and the final permit fee is due. Please see form LD-445 and instructions. Note that all expansions of permitted disturbed area require modifications to the ESC Plans, the SWM Plans and the SWPPP, and associated review and approval by VDOT and a Certified Plan Reviewer, inclusive of form LD-445C. For spatially phased projects, more than one LD-445C form is required and submitted at different times covering different areas of the overall project or total land development. However, each LD-445C must be only for the portion with final and complete plans. For temporally phased projects within a previously permitted area or for those with major plan revisions within an area that was previously reviewed, certified and permitted, separate and additional LD-445C forms are required to document plan review and approval. The construction project shall not proceed in areas where the additional land disturbance or major plan revisions are needed until such time that the permit modification has been reviewed and processed by DEQ.

3.1.5 Because of the potential need for a permit modification in the event that the disturbed area listed is not sufficient to complete the project as planned and designed, it is recommended that a liberal determination be applied when defining the area of land development and the area of land disturbance for the purposes of Construction General Permit coverage. If a permit modification is required (this will be a hold point on the construction schedule), project construction shall not proceed in areas where the additional land disturbance is needed until permit modification coverage is received from DEQ.

4.0 SUPPORT FACILITIES FOR THE RLDA

4.1 SUPPORT FACILITIES WITHIN VDOT R/W

Onsite support facilities are defined as those facilities such as staging areas, equipment and material storage areas, unsuitable and surplus material disposal areas, borrow areas, etc., which are located within VDOT R/W or easement. Use of VDOT R/W outside the project limits and designated land development area for the RLDA must be pre-approved by the Area Construction Engineer or his designee.

4.1.1 Onsite support facilities are to be covered under the Construction General Permit for the RLDA. The SWPPP for the onsite support facilities shall include, but is not limited to, the ESC Plan, the Pollution Prevention Plan and the post construction SWM Plan (if applicable) and shall become a component of the SWPPP for the RLDA.

4.1.2 In most instances, the identification of the locations of the onsite support facilities is the responsibility of the contractor or other such person performing/managing the land-disturbing activity and the exact location and size of such areas within the limits of the RLDA are unknown until after the award of the contract for the RLDA and/or after the Construction General Permit registration process for the RLDA has been completed.

4.1.3 The Contractor shall develop a SWPPP for all onsite support facilities requiring coverage under the Construction General Permit which were not identified in the construction plans or other such documents or the registration information submitted for Construction General Permit coverage for the RLDA. The SWPPP shall include but is not limited to the ESC Plan, the Pollution Prevention Plan and the post construction SWM Plan, for such areas in accordance with the VDOT R&B Standards and Specifications, the instructions in the current version of the VDOT Drainage Manual, IIM-LD-195 and VDOT's Approved ESC and SWM Standards and Specifications. The Contractor shall ensure that ESC and SWM plans and supporting computations are appropriately sealed by a licensed professional. The contractor shall have the ESC Plan and post-construction SWM Plan for the onsite support facilities reviewed and approved by an independent reviewer appropriately certified through DEQ's SWM and/or ESC Plan Reviewer Certification Program. Form LD-445C shall be used to certify the plan review and approval process.

After review and approval by DEQ certified individuals as referenced above, the SWPPP, including the LD-445C form and updated forms LD-445 and LD-445A for the onsite support facilities shall be submitted to the VDOT Project Manager and the RLD for review and approval. The VDOT Project Manager will coordinate with the District VPDES Permit Coordinator to facilitate the permits through Central Office and DEQ. Construction shall not proceed in areas where the additional land disturbance is needed until such time that permit modification has been reviewed and processed by the District and DEQ.

4.1.4 The SWPPP for the RLDA will require modification for the inclusion of the SWPPP for the onsite support facilities once such areas are identified and plans are reviewed and approved by the RLD for the RLDA (see Section 107.16(e) of the 2020 R&B Specifications (as amended) and Chapter 10 of the VDOT Drainage Manual or

additional information for modifying the SWPPP, including the approved ESC Plan and post-construction SWM Plan).

4.1.5 The impact of any additional land disturbance area associated with any onsite support facilities identified in Section 4.1.4 of this IIM shall be evaluated with regards to changes in the permitting conditions noted in Section 3.1.3 and 3.1.4 of this IIM.

4.2 SUPPORT FACILITIES OUTSIDE OF VDOT R/W

Offsite support facilities are defined as those facilities such as staging areas, equipment and material storage areas, unsuitable and surplus material disposal areas, borrow areas, etc., which are located outside VDOT R/W or easement.

4.2.1 For all offsite support facilities located outside VDOT R/W or easement, it shall be the responsibility of the contractor to develop all necessary plans and documents and secure any necessary Construction General Permit coverage directly from the VSMP Authority for the area (typically the local governing body) in which the support facility is located.

4.2.2 Plans and documents for any offsite support facility shall be developed in accordance with the requirements of the VSMP Authority for the area in which the support facility is located.

4.2.3 Application for coverage under the Construction General Permit shall be completed in accordance with the requirements of the VSMP Authority for the area in which the support facility is located.

4.2.4 The contractor shall be responsible for the installation of temporary ESC measures and the permanent stabilization of all disturbed areas at borrow and soil disposal sites associated with the RLDA regardless of the need for Construction General Permit coverage at those sites. The installation of temporary ESC measures and the permanent stabilization of all disturbed areas at such sites shall be accomplished in accordance with the requirements of the VSMP or ESC Authority for the area in which the support facility is located or the ESC Law and Regulation, whichever is more stringent.

4.2.5 Evidence of compliance with this section (e.g. permit coverage documentation, exemption accepted by locality or regulatory agency, or related documentation) shall be provided to the Area Construction Engineer or designee and shall be included in the SWPPP and provided to the District VPDES Permit Coordinator or District NPDES Coordinator. The District NPDES Coordinator shall complete portion of LD 445 and submit, along with any other related documentation, to Central Office VPDES Coordinator via the ProjectWise Central Office MS4 folder.

5.0 RESPONSIBLE PARTIES

5.1 VDOT Project Authority

Responsible for initiating the Construction General Permit Registration application process. This includes, but is not limited to, the following:

- Completing, or coordinating the completion of, all the information on the Construction General Permit Registration Information Form LD-445;

- Attaching the completed ESC & SWM Plan Certification Form LD-445C to the permit application assembly and sending the completed assembly for each RLDA to the District or Central Office (as applicable) VPDES Construction General Permit Coordinator; and

- Processing the Construction General Permit registration assembly for the offsite support facilities within VDOT R/W or easement and submitting completed assemblies to the District or Central Office (as applicable) VPDES Construction General Permit Coordinator.

5.1.1 For the purposes of this IIM, the Project Authority for the RLDA prior to award of the construction contract or the commencement of the land-disturbing activity is assumed to be that VDOT person with responsibility for oversight of the preliminary engineering aspects of the RLDA, such as the Project Manager, the Residency Contract Administrator, or other such person that manages/oversees the pre-construction activities of the proposed land-disturbing activity.

5.1.2 For the purposes of this IIM, once the construction contract has been awarded or the land-disturbing activity has begun, the Project Authority for the RLDA is assumed to be the designated VDOT RLD. For Design Build projects administered by VDOT, the VDOT Area Construction Engineer (ACE) shall be the RLD.

5.2 ESC Plan Designer / Hydraulic Engineer

Responsible for preparing the ESC and post construction SWM Plan for the RLDA in accordance with VDOT's approved ESC and SWM Standards and Specifications. This includes, but is not limited to, the following:

- Developing and ensuring that all applicable information is included on the SWPPP General Information Sheets (see Chapter 10 of the VDOT Drainage Manual;

- Assisting the Project Authority in completing the Construction General Permit Registration Information Form LD-445 including associated Registration Statement Project Site Map as required; and

- Ensuring completion of the form by an independent reviewer and submission of the Erosion and Sediment Control and Stormwater Management Plan Certification Form LD-445C to the Project Authority. Persons completing LD-445C form must be

certified as ESC Plan Reviewer, or a registered Virginia Professional Engineer, and SWM Plan Reviewer by VA DEQ.

5.3 VDOT District VPDES Construction General Permit Coordinator (VDOT District VPDES Permit Coordinator)

The District VPDES Construction General Permit Coordinator also referred to as the VDOT District VPDES Permit Coordinator is the District Hydraulics Engineer or their designee.

Responsible for coordinating the VPDES Construction General Permit Registration application process for the District. This includes, but is not limited to, the following:

- Collecting all the completed VPDES Construction General Permit Registration application assemblies (i.e., Forms LD-445 and LD-445C) and uploading them to the ProjectWise Central Office MS4 Monthly VPDES Submittals folder or as communicated by VDOT Central Office;

- Uploading the VPDES Construction General Permit Termination Notice Forms LD-445D, the SWM Plan sheets for BMP's and the construction record drawings and certifications for BMP's to ProjectWise Central Office MS4 Monthly VPDES Submittals folder or as communicated by VDOT Central Office

- Attaching a copy of the Construction General Permit Registration Information Form LD-445 to the applicable Construction General Permit coverage letter received from the Central Office VPDES Construction Permit Coordinator and forwarding both to the RLD for each specific RLDA or offsite support facility area located within VDOT R/W or easement.

5.4 VDOT Responsible Land Disturber (RLD)

The RLD is the VDOT person so identified on the SWPPP General Information Sheets and satisfies the requirements of DEQ's RLD Certification Program. For VDOT administered projects, the RLD shall be the Area Construction Engineer (ACE) for a construction project; Residency Engineer or Administrator for a Maintenance project or another certified VDOT individual delegated by such to serve as the RLD.

This person is responsible for ensuring the implementation of the SWPPP (including the ESC, Pollution Prevention and post-construction SWM Plan) for the RLDA and any onsite and offsite support facilities located within VDOT R/W or easement. This includes, but is not limited to, the following:

- Coordinating the review and approval for the SWPPP for any onsite or offsite support facilities within VDOT R/W or easement not identified in the construction plans or other such documents for the RLDA.

- Submit the LD-445D form, construction record drawings and certifications and the completed SWPPP General Information Sheet 1 to the District VPDES Permit Coordinator for termination.

- Coordinating the submission of information for offsite support facilities located within VDOT R/W or easement that requires Construction General Permit coverage.

- Coordinating the submission of information for offsite support facilities located outside VDOT R/W or easement to the VPDES District Permit Coordinator.

- Completing, signing, and forwarding, to the appropriate District VPDES Permit Coordinator, the SWPPP Certification located on SWPPP General Information Sheet 1, certifying that all information noted on the SWPPP General Information Sheets contained in the construction plan set (or other such documents) required to be supplied by the contractor (including that for onsite support facilities) will be received and approved and included with the other SWPPP documents for the proposed RLDA prior to any land disturbance activities occurring in those areas identified by such information.

- Completing and forwarding, to the appropriate District VPDES Permit Coordinator, the Construction General Permit Termination Notice Form LD-445D certifying that final stabilization has been achieved on all portions of the RLDA site and/or offsite support facilities within VDOT R/W or easement and (where applicable) that all permanent (post construction) SWM BMPs have been constructed in accordance with their plan design details and that the BMPs have been made operational.

- Coordinating with the appropriate VDOT District Maintenance Infrastructure Manager to obtain a Maintenance ID number for each permanent (post-construction) SWM BMP and reporting such number, along with other applicable information, on the BMP information portion of the VPDES Construction Permit Termination Notice Form LD-445D.

- The certification that the BMP(s) were constructed in accordance with their plan details and that the BMP(s) have been made functional shall be performed by a person registered in the Commonwealth of Virginia as a Professional Architect, Engineer, Land Surveyor or Landscape Architect.

5.5 VDOT Central Office VPDES Permit Coordinator

The Central Office VPDES Permit Coordinator is a designated person in the Central Office Location and Design Division.

Responsible for compiling all Construction General Permit Registration assemblies statewide and applying to DEQ for coverage under the Construction General Permit for the RLDAs or offsite support facilities within VDOT R/W or easement. This includes, but is not limited, to the following:

- Submitting the Construction General Permit Registration and Termination information and registration fees (in the form of an IAT) to DEQ;

- Forwarding the Construction General Permit coverage letters (including permit number) received from the DEQ to the District VPDES Permit Coordinator;

- Providing specific project information to the Central Office L&D Administrative Section for processing the project charges for DEQ;

- Maintaining an online database documenting pertinent information on the RLDAs and offsite support facilities within VDOT R/W or easement submitted for Construction General Permit coverage;

- Compiling SWM BMP data, including record drawings for BMPs and SWM Facilities. Permanent SWM BMP data must be submitted with the Construction General Permit Termination Notice Form LD-445D.

6.0 CONSTRUCTION GENERAL PERMIT REGISTRATION PROCEDURE

Except for emergency related work (covered under Form LD-445F), coverage under the Construction General Permit must be obtained prior to any land disturbance occurring on any proposed project/activity or offsite support facilities within VDOT R/W or easement that exceed the land disturbance threshold amount noted in Section 2.4 of this IIM. Once VDOT submits a complete and accurate registration statement (including applicable permit fee) to DEQ, they must issue or deny Construction General Permit coverage within 60 calendar days. The registration statement will be considered submitted once the appropriate registration information and permit fee have been sent to DEQ by the VDOT Central Office Construction General Permit Coordinator.

Land-disturbing activities requiring Construction General Permit coverage that are conducted in response to a public emergency to avoid imminent endangerment to human health or environment may commence without Construction General Permit coverage provided that both of the following conditions are met:

1. DEQ is advised of the activity within seven (7) calendar days of commencing the land disturbance activity.

2. Construction General Permit coverage (if applicable) is applied for within thirty (30) calendar days of commencing the land disturbance activity.

See Section 6.13 of this IIM for additional information related to the permitting process for emergency work.

6.2 On or before the initiation of the PAC process for a RLDA (or other appropriate stage for those activities that do not go through a formal PAC process), the VDOT Project Authority shall complete, or have the appropriate person complete, the applicable sections of the Construction General Permit Registration Information Form LD-445, attach the ESC and SWM Plan Certification Form LD-445C and send this assembly to the appropriate VDOT District VPDES Permit Coordinator prior to the 21st day of each month.

6.2.1 For Capital Outlay projects, the VDOT Project Authority shall submit the completed permit registration assembly directly to the VDOT Central Office VPDES Permit Coordinator.

6.2.2 For Design Build (D/B) projects, the VDOT Project Authority shall submit the completed permit registration assembly to either the VDOT District VPDES Permit Coordinator (where the project is being managed in the VDOT District Office) or the VDOT Central Office VPDES Permit Coordinator (where the project is being managed in the VDOT Central Office or is a Design Build project managed by the Alternative Project Delivery Division).

6.3 The VDOT District VPDES Permit Coordinator shall review all permit registration assemblies received for completeness, and then upload all assemblies found complete to the ProjectWise Central Office MS4 folder as communicated by VDOT Central Office on or before the last day of each month. The VDOT District VPDES Permit Coordinator will return all incomplete assemblies to the VDOT Project Authority for completion and resubmission.

6.4 The VDOT Central Office VPDES Permit Coordinator shall:

- Compile all Construction General Permit registration and termination information from registration assemblies and enter appropriate data into the RLDA database;
- Create the VDOT Construction General Permit Registration Report;
- Complete the DEQ Registration Statement for Construction General Permit coverage;
- Complete the cover letter for submitting information to DEQ;
- Submit all Construction General Permit registration information, termination documentation, and construction record drawings for permanent SWM Facilities to VDOT management for review and signature;
- Develop submittal packages for DEQ;
- Provide electronic copies of the permit coverage letter, LD-445, LD-445H and a copy of the Construction General Permit to the District VPDES Permit Coordinator and/or Project Manager;

6.5 Once VDOT management reviews and signs the DEQ submittal package, the VDOT Central Office VPDES Permit Coordinator shall submit the information to DEQ for processing. Based on the various reviews and approvals required, it could take approximately fifteen (15) business days for the Central Office VPDES Permit Coordinator to compile and submit the Construction General Permit registration information to DEQ. To facilitate the Construction General Permitting process, the submissions to DEQ will only occur once a month.

6.6 After DEQ receives the Construction General Permit submittal package, DEQ will issue or deny permit coverage for each RLDA or offsite support facility area. Typical processing times of 30 to 60 days should be expected. For those RLDAs or offsite support facility areas approved for coverage, DEQ will issue a permit coverage letter to

the VDOT Central Office VPDES Permit Coordinator with a project specific permit registration number. Where DEQ denies coverage for any RLDA or offsite support facility area, the registration information will be returned to VDOT for revision (as appropriate) and re-submittal.

6.7 The VDOT Central Office VPDES Permit Coordinator will forward the RLDA or offsite support facility area permit coverage letters to the appropriate VDOT District VPDES Permit Coordinator or the VDOT Capital Outlay or Design Build Project Authority.

6.8 Because of the many steps involved in the Construction General Permit coverage process, a minimum of ninety (90) calendar days should be allotted from the time complete registration information is submitted to the District (or Central Office) VPDES Permit Coordinator to the time the permit coverage letter is forwarded to the District VPDES Permit Coordinator or the VDOT Capital Outlay or Design Build Project Authority.

6.9 The VDOT District VPDES Permit Coordinator or the VDOT Capital Outlay or Design Build Project Authority shall attach a copy of the Construction General Permit Registration Information Form LD-445 to each applicable RLDA or offsite support facility area Construction General Permit coverage letter received, and distribute both to the appropriate VDOT RLD.

6.10 The VDOT Central Office VPDES Permit Coordinator shall submit copies of the LD-445 forms to the VDOT Central Office Location and Design Administrative Section in order to debit the appropriate permit registration fee from each specific RLDA.

6.11 The VDOT Central Office VPDES Permit Coordinator shall maintain an online database documenting the registered RLDAs and offsite support facilities within VDOT R/W or easement and shall retain, on file, copies of the Construction General Permit Registration Application information for a period of not less than 3 years after completion of the RLDA or offsite support facilities within VDOT R/W or easement and the termination of the Construction General Permit coverage.

6.12 The Construction General Permit Registration Application for any RLDA or offsite support facility area located within VDOT R/W or easement missing any of the submission cutoff dates (i.e., to VDOT District or Central Office VPDES Permit Coordinator) will be carried forward to the next month's submission to DEQ.

6.13 The following procedures shall be followed for land-disturbing activities related to emergency operations that may require coverage under the Construction General Permit.

6.13.1 The Project Authority shall complete the Notification of Emergency Related Land Disturbing Activities Form LD-445F and submit such to DEQ by mail or electronic transmittal (with copies to the VDOT District and Central Office VPDES Permit Coordinators) no later than seven (7) calendar days after commencement of the land-disturbing activities associated with the emergency operations.

6.13.2 Once a determination is made as to the actual land disturbance area associated with the emergency operations, those operations exceeding the land disturbance thresholds identified in Section 2.4 of this IIM shall follow the procedures in Section

6.0 et seq. of this IIM for obtaining Construction General Permit coverage except for the following:

a. The application for Construction General Permit coverage for the emergency operations shall be submitted to the District VPDES Permit Coordinator no later than fourteen (14) calendar days following commencement of the land-disturbing activities associated with the emergency operations;

b. The application for Construction General Permit coverage for the emergency operations shall be submitted by the District VPDES Permit Coordinator to the Central Office VPDES Permit Coordinator no later than twenty-one (21) calendar days following commencement of the land-disturbing activities associated with the emergency operations; and

c. The application for Construction General Permit coverage for the emergency operations shall be submitted by the Central Office VPDES Permit Coordinator to the DEQ no later than thirty (30) calendar days following commencement of land-disturbing activities associated with the emergency operations.

7.0 CONDITIONS OF COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT

7.1 The SWPPP, along with a copy of the Construction General Permit, the Construction General Permit Registration Information Form LD-445 and the Construction General Permit coverage letter showing the permit registration number, must be retained on the site of the RLDA or the offsite support facility area within VDOT R/W or easement from the commencement of any land disturbance activity to the date of permit coverage termination. Where no facilities are available at the activity site to maintain these documents, they are to be kept by or with the designated VDOT RLD at a central location convenient to the activity site where they would be readily available for review upon request during normal business hours. Where the SWPPP documents are not stored at the site of the RLDA or the offsite support facility area within VDOT R/W or easement, a copy of such documents, except for the ESC and SWM engineering calculations and documentation, shall be in the possession of those with day-to-day operational control over the implementation of the SWPPP (e.g., the VDOT RLD, VDOT ESC Inspector, the contractor's ESCCC person, etc.) whenever they are on site.

7.2 The Construction General Permit requires that the SWPPP be made available for review upon the request of DEQ, the EPA, local government officials or the operator of a municipal separate storm sewer system (MS4) receiving discharge from the RLDA or any of the RLDA's support facilities covered under the Construction General Permit for the RLDA.

7.3 The Construction General Permit requires that a copy of the permit coverage letter and the name and contact information for the VDOT person responsible for the land-disturbing activity and the SWPPP be posted at a publicly accessible location at the activity site. The LD-445A form is to be used to identify the name and contact information for the VDOT responsible person (typically the designated RLD for the

activity). A copy of the Construction General Permit coverage letter and the LD-445A form are to be posted outside the project's construction office along with other Federal and State mandated information.

Where there is no construction office (e.g., a maintenance activity or an offsite support facility), a copy of the Construction General Permit coverage letter and the LD-445A form are to be posted at a location near the project and maintained with the other SWPPP documents for the land-disturbing activity.

7.4 The Construction General Permit requires that the SWPPP be made available for review by the public upon request. Such reviews shall be at a time and publicly accessible location convenient to VDOT, and shall be scheduled during normal business hours and no less than once a month (i.e., at least once a month).

7.5 Any modifications to the approved SWPPP must be implemented in accordance with Section 107.16(e) (as amended) of the VDOT R&B Specifications, VDOT's Approved ESC and SWM Standards and Specifications, and the procedures outlined in the VDOT Drainage Manual and relevant IIMs.

8.0 PROCEDURE FOR TERMINATING COVERAGE UNDER CONSTRUCTION GENERAL PERMIT

8.1 Upon completion of land disturbance activities at the RLDA or offsite support facility area within VDOT R/W or easement (i.e., all areas are stabilized and all permanent SWM BMPs are operational), the VDOT RLD shall coordinate with the appropriate District Maintenance Infrastructure Manager to secure a VDOT Maintenance ID Number for each BMP listed in the Permanent BMP Table A in Section VI of the SWPPP General Information Sheets for the land disturbing activity. Final Inspection, review and acceptance of BMPs is covered in IIM-LD-195. After the final inspection has been completed, and any needed corrective actions are completed, the VDOT RLD shall complete and sign the Construction General Permit Termination Notice form LD-445D. The LD-445D form (including all permanent BMP information) is to be submitted to the appropriate VDOT District VPDES Permit Coordinator prior to the 21st day of the month. A copy of the LD-445D form (including all permanent BMP information) is to be sent to the VDOT District Infrastructure Manager or designee, State Infrastructure Manager or designee, and the District NPDES Coordinator.

For the purpose of Construction General Permit termination for the VDOT RLDAs or offsite support areas located within VDOT R/W or easement, an area is considered stable when permanent vegetative cover has been established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion. In some instances, termination may be allowed without final stabilization, if another operator has assumed control and provides permit coverage, or if the activity is covered under an alternative VPDES or state permit.

8.2 The VDOT District VPDES Permit Coordinator shall upload all LD-445D forms (including the permanent BMP information, SWM Plan sheets, construction record drawings and certifications) received to the ProjectWise Central Office MS4 Monthly

VPDES Submittals folder or as communicated by VDOT Central Office on or before the last day of each month.

8.3 The VDOT Central Office VPDES Construction Permit Coordinator shall compile all VPDES Construction Permit termination information and enter the appropriate data into the VPDES database. The VDOT Central Office VPDES Construction Permit Coordinator shall generate a VPDES Construction General Permit Termination Report from the VPDES database. The permanent BMP information is to be added to the VPDES Construction General Permit Termination Report and all information is to be sent to DEQ along with the monthly VPDES Construction General Permit Registration Report.

8.4 The VDOT Central Office VPDES Permit Coordinator shall retain a copy of the permit termination information on file for a period of not less than 3 years after the termination date. The VDOT Central Office VPDES Permit Coordinator shall also enter the permanent BMP information into the L&D BMP Design Data Base.

9.0 NON-CGP REGULATED LAND DISTURBING ACTIVITY (RLDA) REPORTING

9.1 VDOT operates Regulated Land Disturbing Activities (RLDAs) under a set of Annual Standards & Specifications for ESC & SWM (AS&S) approved by DEQ. Under the approved AS&S, all VDOT RLDAs must be reported to the DEQ in a timely manner, as DEQ has oversight of VDOT's RLDAs.

9.2 In order for the Central Office VPDES Permit Coordinator to report Non-CGP RLDAs to DEQ as required by VDOT's AS&S, every District VPDES Permit Coordinator shall collect and report the Non-CGP RLDAs in their District in a format approved by DEQ and provided by the Central Office VPDES Permit Coordinator and upload to the ProjectWise Central Office MS4 folder as shared and communicated by Central Office. To coordinate Non-CGP RLDA reporting to DEQ, the District VPDES Permit Coordinator shall report to the Central Office VPDES Permit Coordinator in accordance with the following schedule:

Reporting Period	Due to Central Office By
July 1 – October 31	November 15 (of the same calendar year)
November 1 – February 28/29	March 15 (of the same calendar year)
March 1 – June 30	July 15 (of the same calendar year)

9.3 Non-CGP RLDAs that are not the responsibility of a District shall be reported by the responsible party to the Central Office VPDES Permit Coordinator using the same format on the same schedule noted in section 9.2. Examples of such projects include Non-CGP RLDAs from maintenance, environmental, and Capital Outlay activities where VDOT is the owner or operator.

9.4 The Central Office VPDES Permit Coordinator shall collect the Non-CGP RLDA reports from the District VPDES Permit Coordinators or responsibility party using the schedule above and report them to the Virginia DEQ using the following email address <Standardsandspecs@deq.virginia.gov> by the end of the month when the District reports are due to the Central Office (see section 9.2).

10.0 FORMS

LD-445	Construction General Permit Registration Information
LD-445A	Construction General Permit Contact Information
LD-445C	ESC and SWM Plan Certification
LD-445D	Construction General Permit Termination Notice
LD-445F	Notification of Emergency Related Land Disturbing Activities
LD-445H	Delegation of Authority
LD-445I	Annual Standards and Specifications Entity Form

L&D forms except LD-445H are available through the VDOT website and can be downloaded at the following link: http://vdotforms.vdot.virginia.gov/

Appendix D – Form C-107

CONSTRUCTION RUNOFF CONTROL INSPECTION FORM (CRCIF)
C-107 CONTRACTOR INSPECTION SHEET

Project Name/ID _____ UPC _____

Contractor _____

Inspection Date _____

Type of Inspection: (Check Appropriate Block)

(1) Schedule 1: (5 Business Days and within 24 hours following a measurable storm event) ☐

After Measurable Storm Event ☐ Estimated Total Rainfall of Storm Event - _____ inches

(2) Schedule 2: (Monday and Thursday/ 4 Business Days) ☐

(3) Monthly Schedule ☐

(4) ☐ Other Describe: _____

Weather Conditions (At Time of Inspection) (Check All Appropriate)

Clear ☐ Sunny ☐ Partly Cloudy ☐ Cloudy ☐

Cold ☐ Cool ☐ Mild ☐ Hot ☐

Is there any discharge occurring from construction site at time of inspection?

Yes ☐ No ☐

If yes, is discharge compliant with the Erosion and Sediment Control Regulation and VPDES Construction Permit Requirements?

Yes ☐ No ☐

If no, describe conditions of discharge: _____

ITEM #	ESC INSPECTION QUESTIONS	N/A[1]	YES[2]	NO[3]
1	Have stabilization activities been initiated on all disturbed areas that have reached final grade or that will remain dormant for more than 14 days?	☐	☐	☐
2	Have stabilization activities been completed within 7 days of initiation?	☐	☐	☐
3	Have disposal/borrow and soil stockpiles areas been stabilized and/or protected with sediment trapping measures?	☐	☐	☐
4	Have perimeter controls been constructed as a first step prior to initiation of land disturbing activities (including clearing or grubbing)?	☐	☐	☐
5	Are perimeter and other erosion and sediment control structures and systems being maintained, inspected and repaired, as necessary, to ensure functionality?	☐	☐	☐
6	Have all land-disturbing activities occurred within the approved ESC plan area?	☐	☐	☐
7	Have earthen structures, such as dams, dikes, and diversions, been immediately stabilized upon installation?	☐	☐	☐
8	Have sediment basins and traps been constructed according to plans, specifications, and/or standards?	☐	☐	☐
9	Are all cut and fill slopes at final grade adequately stabilized?	☐	☐	☐
10	Is concentrated water flowing through adequate slope drains, flumes, or other non-erodible conveyances on cut or fill slopes?	☐	☐	☐
11	Is stormwater runoff containing sediment or turbidity being properly treated prior to discharge?	☐	☐	☐
12	Where water seeps from slope faces, has adequate drainage or erosion protection been provided?	☐	☐	☐
13	Do all operational storm sewer and culvert inlets have inlet protection in accordance with plans, specifications, and/or standards?	☐	☐	☐
14	Are constructed stormwater conveyance channels and ditches stabilized with appropriate channel lining and/or outlet protection?	☐	☐	☐
15	Is in-stream construction being conducted using measures to minimize channel impacts?	☐	☐	☐
16	Are temporary stream crossings of non-erodible material installed at locations where construction equipment must cross?	☐	☐	☐
17	Are all water quality permit requirements being adhered to?	☐	☐	☐
18	Is re-stabilization of in-stream construction areas complete before leaving the site?	☐	☐	☐
19	Are utility trenches stabilized properly according to the specifications?	☐	☐	☐
20	Is effluent from dewatering operations being filtered (including in-stream structure dewatering)?	☐	☐	☐
21	Are construction entrances installed at appropriate locations and being maintained properly?	☐	☐	☐

ITEM #	ESC INSPECTION QUESTIONS (CONTINUED)	N/A[1]	YES[2]	NO[3]
22	Is any sediment tracking on public roadways cleaned-up at the end of each work day?	☐	☐	☐
23	Have all temporary ESC measures that are no longer needed been removed and have all such areas been re-graded, as necessary, and stabilized?	☐	☐	☐
24	Are properties and waterways adjacent to the project site being adequately protected from accidental land disturbance, potential pollutant discharge, erosion, flooding, and sedimentation from the project site?	☐	☐	☐
25	Are all discharges from the construction site allowable under the VPDES construction permit?	☐	☐	☐
26	Are all ESC deficiencies from previous reports being addressed within allowable/established time frames?	☐	☐	☐
27	Is the location of the on-site rain gage identified on the record set of plans or in other appropriate SWPPP documents?	☐	☐	☐
28	Is the data from the daily observations of the rain gage being documented and included in the SWPPP in accordance with the Specifications and/or the SWPPP General Information Sheet?	☐	☐	☐
ITEM #	**POLLUTION PREVENTION (P2) INSPECTION QUESTIONS**	**N/A[1]**	**YES[2]**	**NO[3]**
29	Have all potential pollutant generating activities present on the site been identified in the SWPPP and addressed with an approved Pollution Prevention Plan?	☐	☐	☐
30	Is the person or contractor responsible for implementing and maintaining the pollution prevention practices for each potential pollutant generating support activity identified in the approved Pollution Prevention Plan?	☐	☐	☐
31	Has pollution prevention awareness been provided to appropriate personnel?	☐	☐	☐
32	Are chemicals being properly stored (e.g., under cover or within secondary containment) and handled?	☐	☐	☐
33	Are storage containers labeled to describe contents?	☐	☐	☐
34	Are construction products, materials, and wastes being properly stored, handled, and disposed of?	☐	☐	☐
35	Is the site absent of loose or uncontrolled trash and debris?	☐	☐	☐
36	Are construction waste containers being covered during precipitation events and at the end of the day?	☐	☐	☐
37	Is the site absent of spills, leaks, or stains (e.g., from hydraulic hoses, vehicle/equipment maintenance and fueling operations, etc.)?	☐	☐	☐
38	Are chemicals, soaps, solvents, and wash water from construction materials (e.g., from release oils and curing compounds from hand tools) prevented from leaving the site?	☐	☐	☐
39	Is vehicle wash water free of soaps/detergents and properly treated before leaving the site?	☐	☐	☐
40	Is concrete wash-out being directed into a properly installed leak-proof container or leak-proof settling basin?	☐	☐	☐
41	Are concrete wash-out areas being properly maintained and utilized?	☐	☐	☐
42	Are all other unauthorized non-stormwater discharges prevented from leaving the site (including untreated dust control water)?	☐	☐	☐
43	Are all P2 deficiencies from previous reports being addressed within allowable/established time frames?	☐	☐	☐
ITEM #	**SWPPP UPDATE AND MODIFICATION QUESTIONS**	**N/A[1]**	**YES[2]**	**NO[3]**
44	Is the SWPPP being modified, amended and updated in accordance with the specifications and/or the SWPPP General Information Sheet?	☐	☐	☐
45	Is a record set of plans being maintained and updated to document SWPPP changes?	☐	☐	☐
46	Are modifications, amendments or updates to the SWPPP being signed by the contractor and VDOT?	☐	☐	☐

1 – N/A: Not Applicable
2 – YES: All related contract items, requirements, plans, specifications, standards, and permits pertaining to this question are being satisfied
3 – NO: See Note 1 on Sheet 4

I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Certified CONTRACTOR: *See Note 2 on Sheet 4*				
	Name	*Signature*	*ESCCC Certification Number*	*Date*
Certified Inspector*: See Note 3 on Sheet 4*				
	Name	*Signature*	*DEQ Certification Number*	*Date*

Provide copies to 1.) the Contractor, 2.) the VDOT Project Records

CONSTRUCTION RUNOFF CONTROL INSPECTION FORM (CRCIF)
C-107 DEFICIENCY DESCRIPTION SHEET

Project Name/ID _____ UPC _____

Contractor _____

Inspection Date _____

ITEM #	STATION	DESCRIPTION OF PROBLEM, LOCATION, AND RECOMMENDED CORRECTIVE ACTION *(SEE NOTE 5)*	DATE TO BE CORRECTED BY	DATE CORRECTIVE ACTION COMPLETED

CONSTRUCTION RUNOFF CONTROL INSPECTION FORM (CRCIF)
C-107 NOTES AND ACRONYMS SHEET

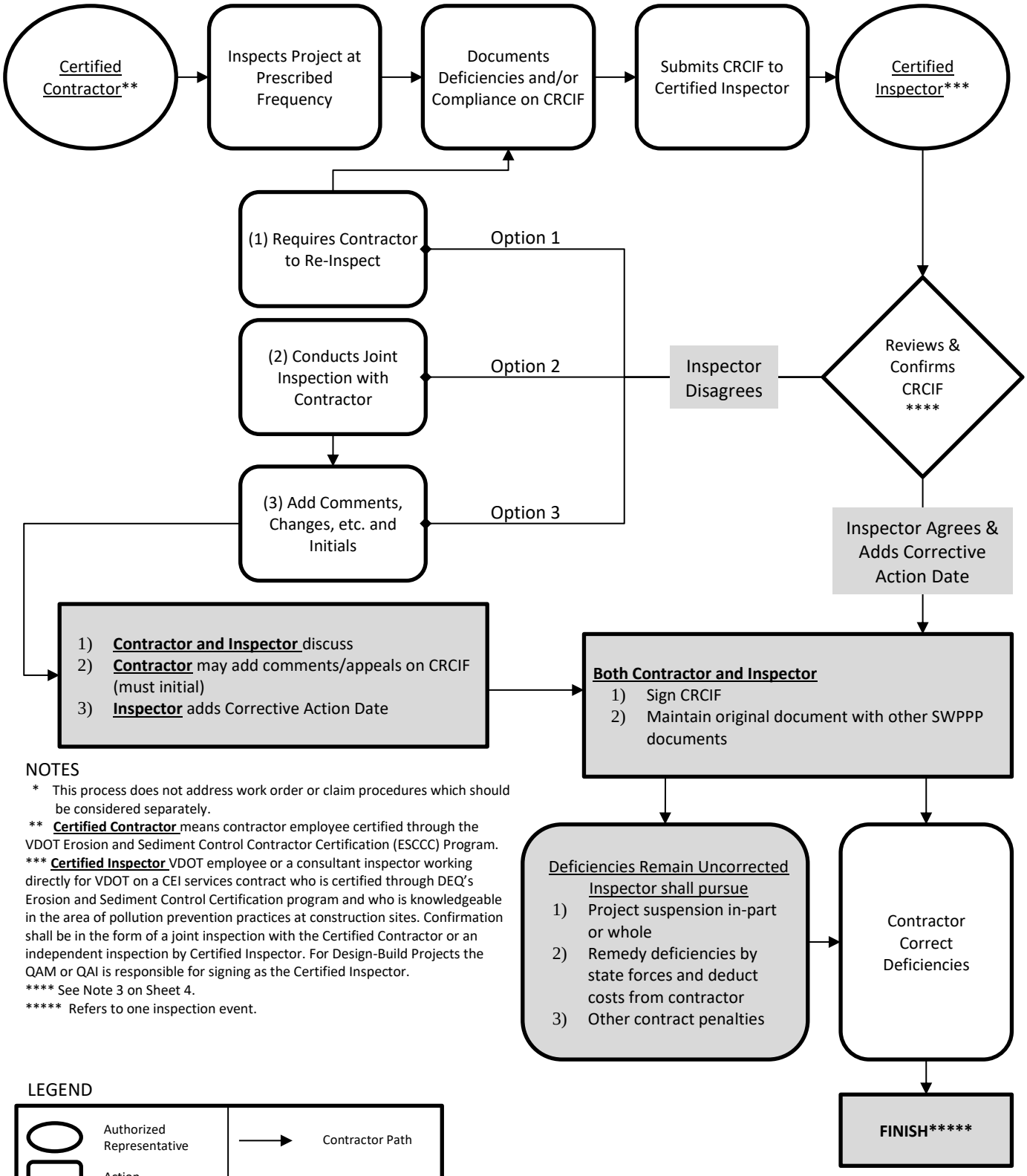
NOTES

1. If any "No" boxes are checked on the "Inspection Questions List" on Part I or if any other deficiencies of a contract specification plan item or SWPPP requirement is noted, the C-107 Deficiency Description Sheet is to be used to document the specifics of the deficiency. The description of the deficiency must contain (1) the permit condition deficiency, if applicable, (2) a description of the deficiency, (3) a corrective action deadline (should be as soon as practical and prior to the next anticipated measurable storm event but no later than seven days after the date of the site inspection that identified the deficiency) and (4) a recommended solution or approach. If this is a follow-up inspection, previous deficiencies that have been corrected must be documented as such. Date of when previous deficiencies have been corrected must be completed. If conformity to specifications and plans is being achieved but the site conditions indicate that plan or specification adjustments may be needed to address environmental concerns, such conditions should be immediately referred to the designated Responsible Land Disturber (RLD) for resolution. SWPPP shall be updated no later than seven days following any modifications to its implementation.
2. The Part I inspection and report is to be completed in accordance with the inspection schedule in the most recent Supplement to the VDOT R&B specifications. Inspection to be conducted and report signed and submitted by a Contractor employee (Certified Contractor) who is certified through the VDOT Erosion and Sediment Control Contractor Certification (ESCCC) Program
3. The Part I report is to be accepted, confirmed, certified and signed by a VDOT employee or a consultant inspector working directly for VDOT on a CEI services contract (Certified Inspector) who is certified through DEQ's Erosion and Sediment Control Certification program and who is knowledgeable in the area of pollution prevention practices at construction sites. Confirmation shall be in the form of a joint inspection with the Certified Contractor or an independent inspection by Certified Inspector. For Design-Build Projects the QAM or QAI is responsible for signing as the Certified Inspector.
4. All original completed C-107 Forms are to be maintained with the other SWPPP documents for the land disturbing activity. Copies of this report are to be provided to the Contractor and the VDOT Project Inspector to keep in the project records.
5. For Part I, non-compliant, non-compliance, or deficient is defined as documented evidence of (1) off-site damage in the form of sedimentation, unauthorized dewatering or pollutant discharge, erosion, flooding, encroachment outside of the project/permit limits, or a permit condition deficiency, (2) on-site damage in the form of significant erosion, flooding, sedimentation or uncontrolled pollution discharge, or (3) a previous deficiency that has not been corrected within the specified timeframe.
6. For the purposes of this document, a day is a calendar day unless otherwise stated.

ACRONYMS

ACE	Area Construction Engineer
CEI	Construction, Engineering and Inspection
CRCIF	Construction Runoff Control Inspection Form
DEQ	Virginia Department of Environmental Quality
ESC	Erosion and Sediment Control
ESCCC	Erosion and Sediment Control Contractor Certification
MS	Minimum Standard
P2	Pollution Prevention
R&B	Road & Bridge
RLD	Responsible Land Disturber
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
VAC	Virginia Administrative Code
VDOT	Virginia Department of Transportation
VESCR	Virginia Erosion and Sediment Control Regulations
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program

CONSTRUCTION RUNOFF CONTROL INSPECTION FORM (CRCIF)
C-107 CHAIN OF DOCUMENTED COMMUNICATION*



NOTES

* This process does not address work order or claim procedures which should be considered separately.

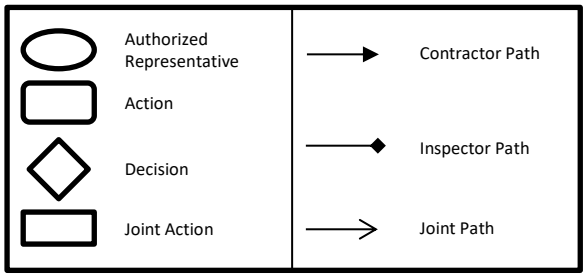
** **Certified Contractor** means contractor employee certified through the VDOT Erosion and Sediment Control Contractor Certification (ESCCC) Program.

*** **Certified Inspector** VDOT employee or a consultant inspector working directly for VDOT on a CEI services contract who is certified through DEQ's Erosion and Sediment Control Certification program and who is knowledgeable in the area of pollution prevention practices at construction sites. Confirmation shall be in the form of a joint inspection with the Certified Contractor or an independent inspection by Certified Inspector. For Design-Build Projects the QAM or QAI is responsible for signing as the Certified Inspector.

**** See Note 3 on Sheet 4.

***** Refers to one inspection event.

LEGEND



CONSTRUCTION RUNOFF CONTROL INSPECTION FORM (CRCIF)
C-107 VDOT INSPECTION SHEET

Project Name/ID _____ UPC _____

Contractor _____

Inspection Date _____
(See Note 5 on Sheet 2)

ITEM #	INSPECTION QUESTIONS	N/A	YES	*NO*
1	Is a copy of the signed VPDES Construction Permit coverage letter in the SWPPP?*	☐	☐	☐
2	Is a copy of the VPDES General Permit For Discharges Of Stormwater from Construction Activities contained in the SWPPP?*	☐	☐	☐
3	Are copies of the LD-445 and LD-445E forms contained in the SWPPP?*	☐	☐	☐
4	Is a copy of the LD445A form completed and posted in accordance with the SWPPP General Information Sheet requirements?*	☐	☐	☐
5	Are all ESC and P2 inspections being performed, recorded and documented in accordance with the specifications?	☐	☐	☐
6	Are corrective actions being identified, performed and documented in accordance with the specifications?	☐	☐	☐
7	Have enforcement actions been taken?	☐	☐	☐
8	If answer yes to #7, has documentation of enforcement actions been included in the SWPPP?	☐	☐	☐

ITEM #	STATION	DESCRIPTION OF PROBLEM, LOCATION, AND RECOMMENDED CORRECTIVE ACTION (NOTE 4)	DATE TO BE CORRECTED BY	DATE CORRECTIVE ACTION COMPLETED

I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

***VDOT ACE**: See Note 3 on Sheet 2*				
	Name	*Signature*	*DEQ Certification Number (s)*	*Date*
Provide copies to 1.) the Contractor, 2.) the VDOT Project Records (See Note 2 on Sheet 2)				

CONSTRUCTION RUNOFF CONTROL INSPECTION FORM (CRCIF)
C-107 NOTES AND ACRONYMS SHEET

NOTES

* Applies only to projects with coverage under the VPDES Construction General Permit.

1. All original completed C-107 Forms are to be maintained with the other SWPPP documents for the land disturbing activity.
2. Copies of this report are to be provided to the Contractor and the VDOT Project Inspector to keep in the project records.
3. The Part II inspection and report is to be completed and signed by the VDOT ACE. The ACE may delegate this responsibility to another VDOT employee or consultant inspector working directly for VDOT on a CEI services contract provided 1) the delegation is made in writing by the ACE, 2) the delegated person is not the same person that signs the C-107 Part I form, 3) the delegated person is responsible for the overall operation of the project, making assignments, supervising, and providing technical advice to project inspectors 4) the delegated person is certified through DEQ's Erosion and Sediment Control and Stormwater Management Certification programs and is knowledgeable in the area of pollution prevention practices at construction sites.
4. If any "No" boxes are checked on the "Inspection Questions List" on Part II or if any other deficiencies of a contract specification plan item or SWPPP requirement is noted, the Deficiency Description Table is to be completed to document the specifics of the deficiency. The description of the deficiency must contain (1) the permit condition deficiency, if applicable, (2) a description of the deficiency, (3) a corrective action deadline (should be as soon as practical and prior to the next anticipated measurable storm event but no later than seven days after the date of the site inspection that identified the deficiency) and (4) a recommended solution or approach. If this is a follow-up inspection, previously addressed deficiencies that have been corrected must be documented as such.
5. The C107 Part II shall be completed at the initiation of the land disturbing activity and every 60 days thereafter until termination of the VPDES Construction General Permit coverage.

ACRONYMS

ACE	Area Construction Engineer
CEI	Construction, Engineering and Inspection
CRCIF	Construction Runoff Control Inspection Form
ESC	Erosion and Sediment ControlP2 Pollution Prevention
R&B	Road & Bridge
SWM	Stormwater Management
SWPPP	Stormwater Pollution Prevention Plan
VDOT	Virginia Department of Transportation
VPDES	Virginia Pollutant Discharge Elimination System

Appendix E – IIM LD-195

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Virginia Stormwater Management Program	NUMBER: IIM-LD-195.13
SPECIFIC SUBJECT: Requirements for Erosion & Sediment Control and Stormwater Management Plans for VDOT Projects	DATE: DRAFT
	SUPERSEDES: IIM-LD-195.12
APPROVAL:	Susan H. Keen, P.E. State Location and Design Engineer Approved _____, 2021

Changes are shaded.

CURRENT REVISION

Updated information in Scenarios 1 & 4.

EFFECTIVE DATE

Unless identified otherwise within this IIM, the information contained in this IIM is effective upon receipt.

DRAFT

1.0 PROGRAM PURPOSE AND NEED

1.1 VDOT's Stormwater Management Program

The Virginia Stormwater Management Act, the VSMP Regulations, the Virginia Pollutant Discharge Elimination System (VPDES) General Permit for Discharges of Stormwater from Construction Activities (the Construction General Permit – or CGP) and the VPDES Individual Permit for Discharge of Stormwater from Municipal Separate Storm Sewer System (Permit No. VA0092975) require that VDOT implement a stormwater management (SWM) Program that protects the quality and quantity of state waters from the potential harm of unmanaged stormwater runoff resulting from land-disturbing activities. This IIM addresses the application of these regulatory requirements as they relate to development of Post-Construction Stormwater Management Plans for VDOT land- disturbing activities.

Other elements of VDOT's SWM Program are addressed by the VDOT Drainage Manual and current editions of other IIMs, including:

- IIM-LD-242 which addresses the application and administration of the VPDES General Permit for Discharges of Stormwater from Construction Activities to VDOT (Regulated Land Disturbing Activities (RLDAs);

- IIM-LD-243 which addresses signing and sealing of plans and documents including Erosion and Sediment Control (ESC)/SWM Plans and construction record drawings;

- IIM-LD-251 which addresses the purchase of nutrient credits to address post-construction water quality reduction requirements for VDOT land-disturbing activities associated with construction projects.

- IIM-LD-256 which addresses VDOT Oversight Responsibilities for VDOT projects with coverage under the VPDES General Permit for Discharges of Stormwater from Construction Activities and other Regulated Land Disturbing Activities.

- IIM-LD-258 which addresses policy, general information and regulatory requirements to identify VDOT's Roles and Responsibilities for Erosion & Sediment Control (ESC) and Stormwater Management (SWM) for Locally Administered Projects (LAP), for which VDOT is not the Construction General Permit (CGP) permittee.

2.0 PROGRAM ADMINISTRATION

2.1 Administration of VDOT's ESC and SWM Standards and Specifications

VDOT's Annual ESC and SWM Standards and Specifications shall apply to all plan design, construction and maintenance activities administered by VDOT and performed either by its internal workforce or contracted to external entities, where such activities are regulated by the VESC and VSMP Law and Regulations.

VDOT's Annual ESC and SWM Standards and Specifications are a compilation of all VDOT documents related to the design, construction, inspection and maintenance of ESC measures, Pollution Prevention (P2) practices and post-development Best Management Practices (BMP) including, but not limited to, all or a portion of the following:

- Road & Bridge Standards
- Road & Bridge Specifications, Supplemental Specifications and Special Provisions
- IIMs
- Drainage Manual
- Pollution Prevention Field Guide for Construction Activities
- Road Design Manual
- Maintenance Division's BMP Inspection and Maintenance Manuals

VDOT's Annual ESC and SWM Standards and Specifications are housed in an on-line electronic database which includes both the current and previous versions of the standards and specifications. The database is dynamic and items within the database may be added to, deleted or revised at any time to reflect changes or updates to VDOT's ESC and SWM Program.

Approval to use any portions of VDOT's Annual ESC and SWM Standards and Specifications, including this IIM, on non-VDOT projects/land-disturbing activities (e.g. Locality Administered Projects and Land Use Permit projects - see section 3.2 of this IIM for definition of non-VDOT projects/land-disturbing activities) shall be secured from the respective VESCP/VSMP Authority. For non-VDOT projects, the Authority means an authority approved by the State Water Control Board to operate a VESCP or VSMP, and can include the Virginia Department of Environmental Quality (DEQ), a locality. Any approval to use portions of VDOT's Annual ESC and SWM Standards and Specifications, will presumably be part of the VSMP/VESCP Authorities overall plan approval process.

2.2 Approval of VDOT's ESC and SWM Standards and Specifications

VDOT secures an annual approval of its ESC and SWM Standards and Specifications from DEQ. By this approval, DEQ authorizes VDOT to administer its ESC and SWM Program in accordance with the Annual ESC and SWM Standards

and Specifications on all regulated land disturbance activities performed by VDOT's internal workforce or contracted by VDOT to external entities.

During any inspections of VDOT land-disturbing activities by DEQ, EPA, or other such regulatory agency, compliance with VDOT's Annual ESC and SWM Standards and Specifications (and all parts thereof) will be expected.

3.0 DETERMINING A REGULATED LAND-DISTURBING ACTIVITY

3.1 VDOT Regulated Land-Disturbing Activities

The SWM and ESC requirements are applicable to all land-disturbing activities where one acre or greater (2,500 square feet or greater in a designated CBPA) of land is disturbed, unless otherwise exempted. The requirements also apply to projects which are less than one acre of disturbance, but which are part of a larger common plan of development, with cumulative disturbance exceeding once acre. ESC requirements apply to all projects which disturb greater than or equal to 10,000 square feet (2,500 square feet or greater in a designated CBPA), unless otherwise exempted. See Section 3.3 of this IIM for discussion on the exemption for routine maintenance operations.

The VSMP Regulations and application of this IIM shall apply to all VDOT regulated land-disturbing activities, both construction and maintenance, administered by VDOT and performed either by its internal workforce or contracted to external entities, including those developed/constructed under, the Design/Build (DB) process and the Capital Outlay Program. PPTA/P3 projects are a special case and, while requiring consistency with VDOT standards and specifications, are often considered by DEQ to be "non-VDOT" projects for the purposes of permit issuance and ESC and SWM Plan review and approval. PPTA/P3 entities should consider that projects may be required to meet the local technical and administrative requirements and to secure permits from the applicable VSMP and VESCP Authorities, while at the same time maintaining consistency with the VDOT standards, specifications and contract provisions related to SWM and ESC.

Provisions for VDOT SWM Program administration including plan design, review and approval are further discussed in IIM-LD-242 and Chapter 11 of the VDOT Drainage Manual.

3.2 Non-VDOT Regulated Land-Disturbing Activities

Requirements for non-VDOT projects are referenced in IIM-LD-258.

3.3 Routine Maintenance Activities

Routine maintenance is defined as those activities performed to maintain the original line and grade, hydraulic capacity or original construction of the project.

Routine maintenance activities are exempt from the Virginia Stormwater Management Act, the attending VSMP Regulations, and the VPDES Construction General Permit requirements regardless of the amount of land disturbance. The routine maintenance exemption does not apply to the ESC Program. See Chapter 10 of the VDOT Drainage Manual for more information on ESC Plan requirements.

Operations and Maintenance Activities:

Such activities include, but are not limited to: ditch cleaning operations, pipe replacement or rehabilitation operations, bridge deck replacement and the normal operational procedures for maintaining the travel surface of unpaved/gravel roadways (i.e., dragging, blading, grading, etc.). Facilities that support the routine maintenance activity (e.g., disposal areas for surplus dirt, borrow pits, or staging areas) are not considered a part of the routine maintenance operation and, therefore, are not covered under the routine maintenance activity exemption.

For any maintenance activity being classified as routine, proper documentation of original conditions must be kept on file at the District office. Documentation of original conditions can be in the form of old plans, photographs or other such documents depicting the original line and grade, hydraulic capacity, or original construction or purpose of the facility. Written and signed statements from those that know the history of the facility can also serve as documentation of the original conditions.

Roadway Construction and Maintenance Activities:

Scenario 1: Mill and Overlay ONLY (with no changes to geometrics)

In accordance with EPA's 2004 Q&A on the NPDES stormwater program, re-paving or sawcutting of pavement is not regulated under the stormwater program unless one or more acres of underlying and/or surrounding soil are cleared, graded, excavated as part of the operation.

The removal and replacement of an existing pavement structure within the same footprint that DOES NOT EXPOSE the subgrade, such as mill and overlay, IS NOT a land disturbing activity under ESC or SWM. The area of such existing pavement would not be included with the other land disturbance areas of the project for the purposes of determining the applicability of the VSMP Regulations and the VPDES General Construction Permit.

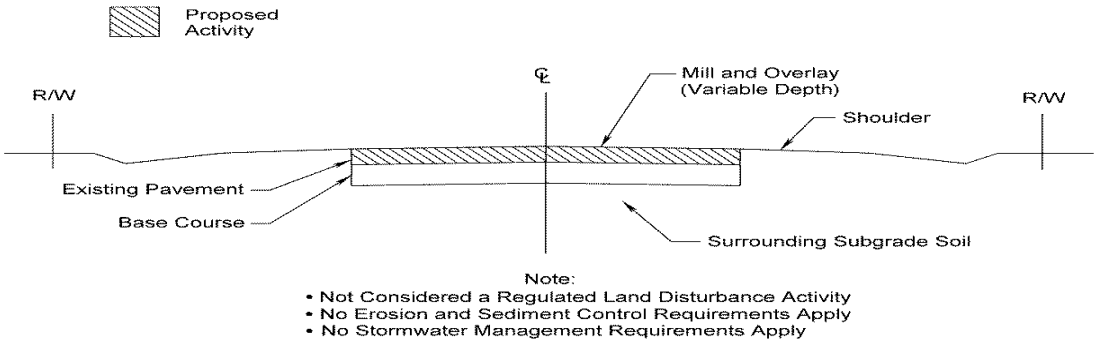


Figure 1. Scenario 1

Scenario 2: Mill and Overlay ONLY (with changes to geometrics)

In accordance with EPA's 2004 Q&A on the NPDES stormwater program, re-paving or sawcutting of pavement is not regulated under the storm water program unless one or more acres of underlying and/or surrounding soil are cleared, graded or excavated as part of the re-paving operation.

The removal and replacement of an existing pavement structure within the same footprint that DOES NOT EXPOSE the subgrade, such as mill and overlay, IS NOT a land disturbing activity under ESC or SWM. The area of such existing pavement would not be included with the other land disturbance areas of the project for the purposes of determining the applicability of the VSMP Regulations and the VPDES Construction General Permit. However, the project must take into consideration the potential changes in site hydrology for the affected conveyances, and they must be evaluated and be in accordance with the VDOT Drainage Manual.

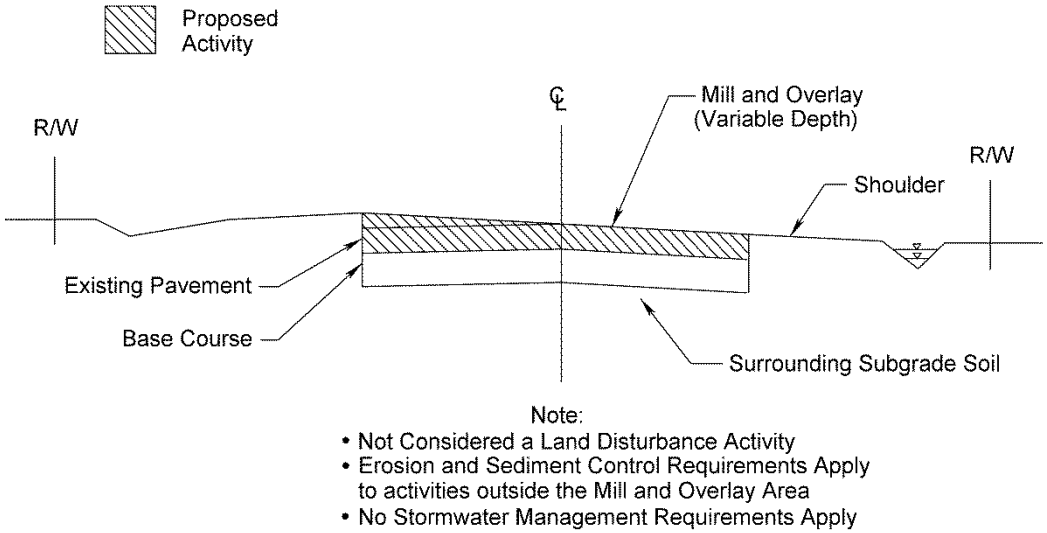


Figure 2. Scenario 2

Scenario 3: Full Depth Reconstruction of Travel Lane (within the existing footprint)

In accordance with EPA's 2004 Q&A on the NPDES stormwater program, if the surrounding soil is cleared, graded or excavated, the operation is a land disturbing activity. However, as presented in this example it meets the definition in the Virginia Stormwater Management Act's exemption for routine maintenance as defined under §62.1-44.15:34.C.7.

The removal and replacement of an existing pavement structure within the same footprint that DOES EXPOSE the subgrade IS considered a land disturbing activity; however it meets the definition of routine maintenance. Therefore, the area of such existing pavement would be included with the other land disturbance areas of the project for the purposes of determining the applicability of ESC regulations and requirements, but it would be exempt from the VSMP Regulations and the VPDES Construction General Permit.

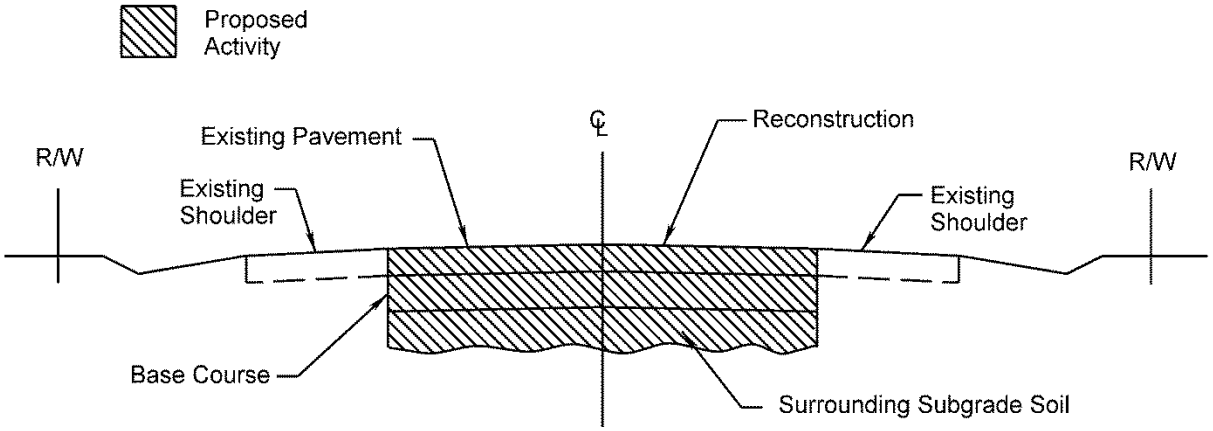


Figure 3. Scenario 3

Scenario 4: Shoulder Reconstruction Within the Existing Footprint

In accordance with EPA's 2004 Q&A on the NPDES stormwater program, if the surrounding soil is cleared, graded or excavated, the operation is a land disturbing activity. However, as presented in this example it meets the definition in the Virginia Stormwater Management Act's exemption for routine maintenance as defined under §62.1-44.15:34.C.7.

Shoulder Reconstruction Within the Existing Footprint, such as Safety Improvement Projects, that include paving of an existing shoulder with a compacted or impervious surface and reestablishment of existing associated ditches shall be deemed routine maintenance. Therefore, the area of such existing pavement would be included with the other land disturbance areas of the project for the purposes of determining the applicability of ESC regulations and requirements, but it would be exempt from the VSMP Regulations and the VPDES general Construction Permit.

Note: this would not include paving an existing compacted shoulder to create an additional lane. If the paving effort includes increasing the post-development impervious acreage from the pre-development acreage, the increase should be identified as redevelopment under the VSMP regulations.

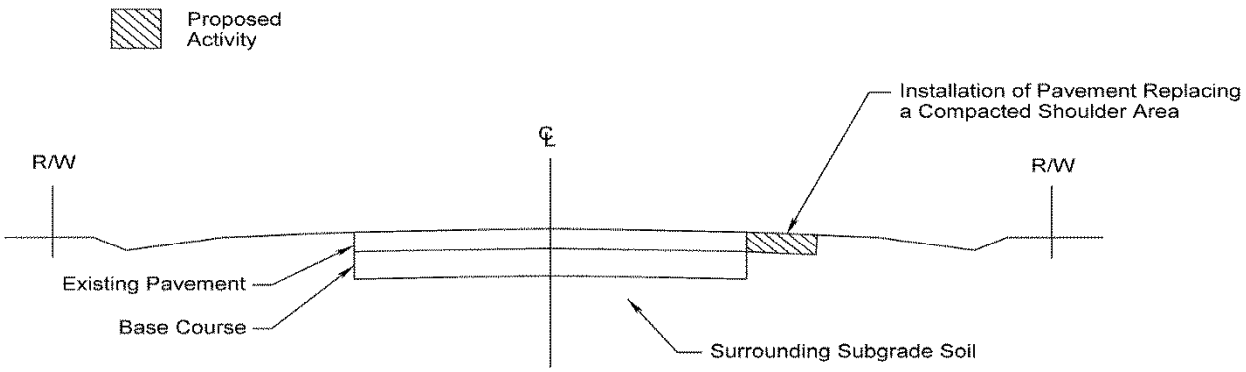


Figure 4 Scenario 4

Scenario 5: Combination of Scenarios (i.e., combination of scenarios 1 through 4)

For projects that will have a combinations of scenarios, the DHE shall coordinate the application of such combination with the State Water Resources/MS4 Engineer and DEQ. The coordination shall include the necessary documentation to illustrate how the different scenarios will be addressed in each case.

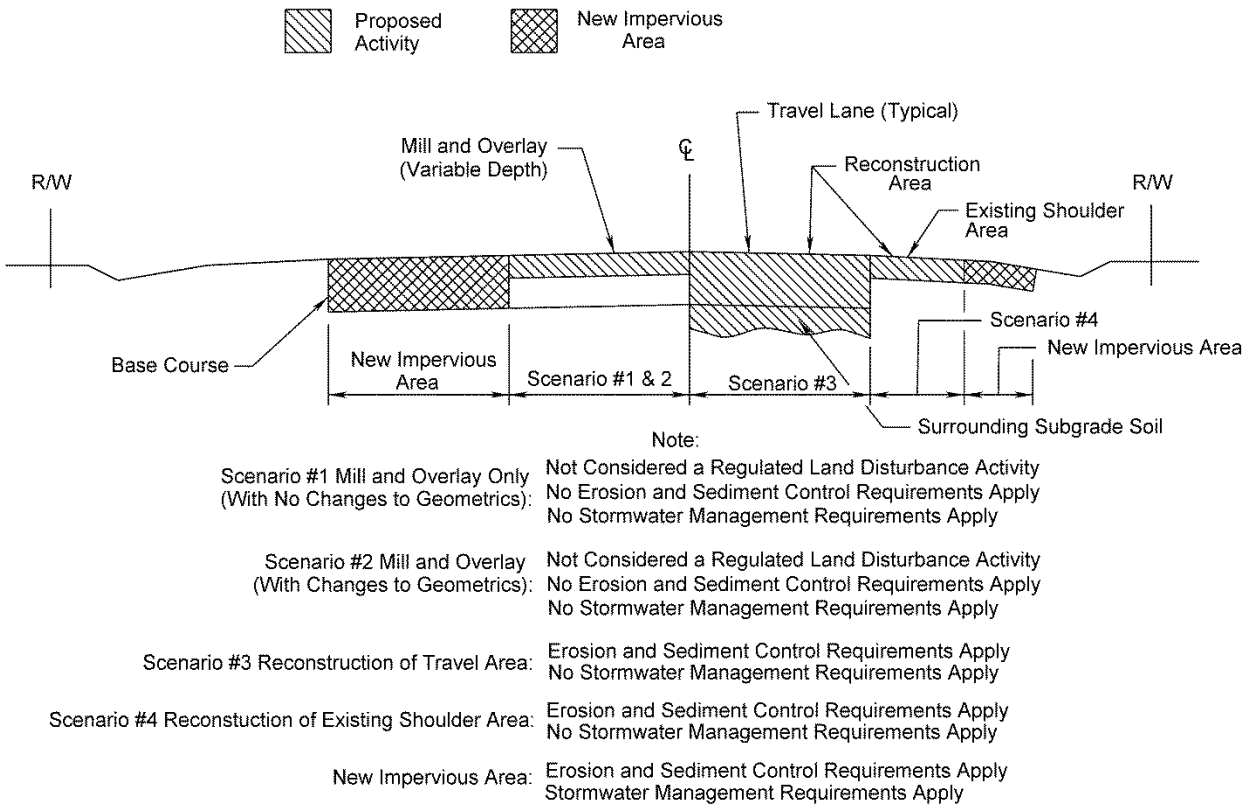


Figure 5. Scenario 5

Where there is any question as to the application of the routine maintenance definition to a land disturbing activity, the appropriate District Hydraulics Engineer should consult with the State Water Resources/MS4 Engineer. Where DEQ consultation or determination is required, appropriate time should be allotted for planning purposes.

4.0 APPLICATION OF TECHNICAL CRITERIA

4.1 Applicable Technical Criteria

Part II of the VSMP Regulations (9VAC25-870-40 et. seq.) provides administrative and technical criteria for regulated land-disturbing activities.

Part IIB (9VAC25-870-62 et. seq.) contains the "new" technical criteria that include the Runoff Reduction methodology (for determining compliance with water quality requirements) and the Energy Balance Equation (for determining compliance with stream channel erosion requirements). Part IIB technical criteria are applicable to all projects unless the project qualifies for application of Part IIC.

Part IIC (9VAC25-870-93 et. seq.) contains the "old" technical criteria that include the Performance/Technology-Based methodology (for determining compliance with water quality requirements) and MS19 criteria (for determining compliance with stream channel flooding and erosion requirements). Part IIC technical criteria are only applicable if the project qualifies for grandfathering as discussed below.

Design criteria and engineering methodologies to comply with either Part IIB or IIC of the technical criteria in the VSMP Regulation can be found Chapter 11 of the VDOT Drainage Manual.

When requested by a locality's VSMP Authority, VDOT projects located in jurisdictions that have adopted more stringent SWM technical criteria than that required by the VSMP Regulation shall be designed, to the largest extent practicable, to meet the locality's more stringent criteria. For any requests to be considered, the VSMP Authority's more stringent criteria must: 1.) have been adopted pursuant to the Virginia Stormwater Management Act; 2.) the request is made in writing; and 3.) such requests are received prior to the completion of the project's plans for use in the public involvement phase of the project (or other such phase where no public involvement process is required). If it is found that the more stringent local SWM requirements are not practicable for the VDOT project, it will be the responsibility of the VDOT's or its designated SWM Plan Designer to implement the requirements to the maximum extent practicable and to demonstrate to the VSMP Authority's technical requirements are not practicable. Documentation shall be kept with the SWM Plan and SWPPP. Early coordination should occur between the VDOT's or its designated SWM Plan Designer and the locality's VSMP Authority, in order to identify any such potential requirements or requests.

If the locality's more stringent criteria are deemed not practicable, documentation shall be provided by VDOT or its designated SWM Plan Designer and shall contain the following information, at a minimum: 1.) identification of the more stringent criteria; 2.) discussion on the required design changes due to the more stringent criteria and identification/quantification of the design changes that can't be met. 3.) discussion on why the more stringent criteria can't be met; 4.) information on the the

additional cost associated with implementing the design changes to accommodate the more stringent criteria.

4.2 Grandfathering

Part II of the VSMP Regulations (9VAC 25-870-48) provides provisions for locality, state and federal projects to be grandfathered under Part IIC provided certain conditions are met. For the purposes of grandfathering VDOT projects, the project shall be considered grandfathered by the VSMP authority and shall be subjected to the Part IIC technical criteria provided the project that can demonstrate an obligation of local, state or federal funding, in whole or in part, prior to July 1, 2012, or the department has approved a SWM Plan prior to this date; a state VPDES permit has not been issued prior to July 1, 2014 and a land disturbance did not commence prior to July 1, 2014.

Any project that is considering utilization of the grandfathering provision shall be evaluated and documented by the District Hydraulics Engineer. The documentation shall clearly demonstrate an obligation of funds prior to July 1, 2012.

When evaluating a project for application of the Grandfathering provision, consideration should be given as to when the project will be advertised and when construction activities will begin. If the project will not begin construction activities prior to July 1, 2019, the project should be designed in accordance with the Part IIB (or the “new”) technical criteria. Land disturbing activities grandfathered under subsections A and B of the regulations shall remain subject to the Part II C technical criteria for one additional state permit cycle. After such time, portions of the project not under construction shall become subject to any new technical criteria adopted by the board.

This written evaluation and determination shall be coordinated with the State Water Resources/MS4 Engineer and DEQ. Upon DEQ approval, the status of a project/activity with regards to the grandfathering provision shall be documented using the appropriate note(s) in Section IV of the SWPPP General Information Sheets. If multiple UPCs exist for the project, each UPC should be evaluated separately to determine the extents or segments of the project that qualify for grandfathering. Portions of a project not under construction by July 1, 2019 will become subject to the new technical criteria adopted by the board.

In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012 such project shall be subjected to the Part IIC technical criteria (no limit to grandfathering period specified in regulation).

Projects eligible for grandfathering may still use Part IIB of the technical criteria. However, in doing so, the design details and pollutant removal efficiency of the BMPs shall be in accordance with the information on DEQ’s BMP Clearinghouse website or identified on VDOT’s approved BMP Standards and Special Provisions.

4.3 Phasing of Construction Project and Associated SWPPP

This section applies to all VDOT projects which will run design and construction in tandem efforts, including Design/Build projects which are on an expedited delivery schedule.

Where a project will be constructed in phases, the SWPPP shall include an ESC Plan, a SWM Plan, and P2 Plan for each phase that includes the scope and extent of land-disturbing proposed for that phase. The SWPPP for the individual phases will be self-sustaining and not incur a deficit in post construction SWM design requirements requiring mitigation on successive phases. These minimum requirements must be satisfied prior to VPDES permit registration.

The initial SWPPP shall cover, at a minimum, the following items:

- Preliminary construction plans documenting the limits of construction and work to be performed;
- Complete ESC Plan for initial phase that has been reviewed and certified by VDOT. The ESC Plan shall be 100% complete and meet all the Minimum Standards for the initial phase.
- Pollution Prevention (P2) Plan for initial phase; and
- Post-Construction SWM including required documentation and calculations, location of all outfalls, identification and description with the water quantity and quality requirements, a topographical site map, and a narrative describing the existing and proposed site conditions.

The initial SWPPP shall contain all required plan content addressed in the VPDES Construction Permit, Stormwater Management Regulations and Erosion and Sediment Control Regulations.

4.4 Selection of Manufactured Treatment Devices (MTDs) and Underground BMPs

In selecting proprietary stormwater systems (MTDs or Underground BMPs), designers and VDOT should strive to design and specify the system that provides the best value to VDOT, considering a variety of factors. Designers should evaluate and compare traditional/conventional Stormwater Management Facilities (“SWM Facilities” - detention, extended detention, filtration systems and infiltration systems) and the proposed underground or manufactured systems to ascertain if the overall value to VDOT is better. This evaluation should include a comparison of capital costs (land, materials and labor), as well as anticipated long-term operation and maintenance costs over the life cycle of the MTD or underground SWM Facilities in comparison to conventional, non-proprietary SWM Facilities alternatives open to the ground surface. When the total life cycle cost for a conventional SWM Facilities alternative is less than for a MTD or underground SWM Facilities, consideration must be given to use of the conventional system, even if the capital costs are higher, unless acquisition of additional R/W or easements are expected to delay the overall project schedule.

If an MTD or underground SWM Facilities determined to be the most appropriate solution, the plans and specifications should identify the minimum performance criterion that the system is expected to meet. Performance criteria may include geometric, hydraulic, materials, operation and maintenance, and water quality characteristics. These performance criteria become the basis for specification and procurement. Specific proprietary systems should not be specified. All products should be selected from the Approved Products List (when feasible) and any water quality performance characteristics (e.g. efficiency, allowable flow rates, etc.) shall be as approved by DEQ.

5.0 EXCEPTIONS FROM TECHNICAL CRITERIA

For those land-disturbing activities where it is determined that water quality requirements cannot be totally achieved utilizing onsite BMPs and/or offsite options (see Chapter 11 of the VDOT Drainage Manual), an exception from the portions of the technical criteria unachievable (e.g., relief from the improvement factor of Energy Balance Equation) may be considered and granted by DEQ, pursuant to 9VAC25-870-122, provided that VDOT coordinates with DEQ and submits a written exception request. The designer or project manager should coordinate consideration of any exceptions directly the DHE. If deemed warranted or necessary, the DHE will assist in documenting the request for exception. This effort shall be documented in accordance with VDOT's Annual Standards and Specifications, including the completion and submittal of LD-445G form, coordinated by the DHE to the State MS4 Engineer and DEQ.

The request shall include documentation of the need for the exception. The documentation shall describe all means and methods evaluated for meeting the water quality/quantity requirements and the reasons why specific means or methods were determined not feasible. The documentation shall also state
that the exception being requested is the minimum necessary to afford relief. Economic hardship alone is not sufficient reason to request an exception.

Any approved exception is to be documented and included in the SWPPP for the project/activity. The appropriate SWPPP General Information Sheet notes are to include the date the exception was approved, by whom it was approved and the nature of the exception (e.g., increased reliance on nutrient credits to ___ lbs. in exceedance of the 25% allowable off site). This same information should be noted and included with other registration information when applying for coverage under the VPDES Construction Permit.

6.0 REVIEW AND APPROVAL OF ESC PLANS

See Section 10.2.2.1 of the VDOT Drainage Manual for certification requirements and review and approval of ESC Plans.

7.0 MAINTENANCE CONSIDERATIONS

Requirements for maintenance of SWM Facilities, the schedule for inspection, maintenance operations, and the identification of persons responsible for the maintenance is addressed in the VDOT Maintenance Division's BMP Inspection and Maintenance Manuals. The long-term operations and maintenance requirements for any SWM Facility shall be considered during SWM Plan development. The applicable inspection and maintenance section of each manual shall be noted using the appropriate note(s) in Section IV of the SWPPP General Information Sheets.

8.0 RECORDKEEPING AND REPORTING

8.1 SWPPP General Information Sheets

The VPDES MS4 and Construction Permits require VDOT to annually report information to DEQ such as the location, type, acres treated and the affected receiving waters of all SWM Facilities (BMPs) installed.

8.2 LD-445D and LD-458 Submittals

BMP information is to be recorded on the SWPPP General Information Sheets and reported through the VPDES Permit Termination Notice Form LD-445D. See the current IIM-LD-242 and Chapter 10 of the VDOT Drainage Manual for additional information.

The LD-458 Surplus Tracking Form will be used to collect any additional phosphorus credit generated by a specific project that could be applied to the TMDL Action Plan in a specific watershed. This form is to be submitted to the State MS4 Engineer for coordination with the Environmental Division.

8.3 Construction Record Drawings

Construction record drawings are required for all permanent SWM Facilities, including approved shop drawings for MTDs, and shall be appropriately signed and sealed by a person registered in the Commonwealth of Virginia as a professional architect, engineer, land surveyor or landscape architect and qualified in the responsible administration of the BMP construction. Construction record documentation shall be provided for all permanent SWM Facilities. The registered professional shall certify that all SWM Facilities have been constructed and made functional in accordance with the SWM Plan. The form LD-445D shall be used to document this certification process. The official record drawings for the project include both the plan drawings and record drawing survey.

Any changes to the proposed SWM Plan or BMPs necessitated during the construction phase of the project, that affects the proposed construction details or the BMP design information shown in the construction plans or documentation, shall be coordinated by the VDOT construction manager with the appropriate VDOT District Hydraulics Engineer. If as-built documentation for permanent SWM Facilities deviates from the approved plans, the Area Construction Engineer should request a review by the District Hydraulics Engineer to determine if modifications to the facility are needed prior to acceptance. As-built documentation should be submitted as early as possible but no less than 30 days prior to expected acceptance. Significant deviation from the approved drawings may delay project acceptance. The record set of construction plans and the BMP information tables in the construction plans or documentation are to be formally revised to reflect any authorized/approved changes to the proposed SWM Plan and/or the proposed BMP construction details. All plan revisions shall be completed in accordance with the VDOT Road Design Manual and the VDOT Construction Division's IIM-CD-2013-12.01, signed and sealed in accordance with Department's sealing and signing policy IIM-LD-243 and filed with the record set of construction plans maintained in the VDOT ProjectWise Plan File Room.

Inspection forms specific to the BMP type(s) should be used to document the construction/installation process. A final inspection for SWM Facilities/BMPs shall be conducted by the VDOT construction manager, the Area Construction Engineer (ACE), the VDOT DHE, the VDOT Maintenance Division Infrastructure Manager (or designee), and the District NPDES Coordinator (or their designees). The inspection shall be conducted prior to final project acceptance to identify any required corrective actions, allowing the contractor to perform these corrective actions. The final inspections should be conducted as early as practicable to allow time for corrective actions. Reinspection may be required after receipt of the as-built documentation.

8.4 Transfer of VDOT Responsibility to Others

The footprint occupied by a BMP, that is installed as part of a VDOT project and is part of VDOT's post-construction SWM Plan, may be utilized for other land use and development, provided that all VSMP requirements are transferred to another entity (e.g. developer or locality). An example project would be where a private developer intends to utilize the area occupied by the BMP for parking spaces to service a shopping center. Prior to the transfer of land and elimination of the BMP, the entity shall demonstrate certain conditions have been met:

1. The entity (e.g. developer or locality) shall provide the applicable District Hydraulics Engineer a conceptual plan of how they are going to account for VDOT's SWM requirements;

2. Upon approval from the District Hydraulics Engineer, the entity shall provide an executed agreement stating the SWM requirements are to be transferred to the entity in perpetuity. This agreement shall not preclude any requirements of the locality's VSMP Authority, including an executed maintenance agreement for the replacement BMP(s);

3. Demonstrate to the District Hydraulics Engineer that all VSMP requirements will be transferred to another entity (e.g. developer or locality) to the satisfaction of the applicable VSMP Authority. The SWM Plan and maintenance agreement that is submitted to the VSMP Authority for review and approval must include the post-construction SWM requirements that are currently being satisfied by the existing BMP;

4. Replacement BMPs have been constructed and made operational prior to removal of VDOT's BMP and transfer of land; and

5. All maintenance agreements with the applicable VSMP Authority have been executed and recorded to carry with the land.

It is important to note that the release of an existing VDOT easement requires a separate VDOT Property Management disposal process. Compensation for the release of easement rights will be required and easements will be conveyed by quitclaim deed. Easement releases should be coordinated with the Property Management Program Manager, 1401 East Broad Street, Richmond, VA. 23219.

Appendix F – SWPPP/VPDES Permit Crosswalk

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
General Permit Application and Termination of Coverage			
1	• 9VAC25-880-50 General Permit Application	Registration Statement	• Form LD-445 Construction Activities • SWPPP General Information Sheet (GIS), Section I General Information, Item 15
2	•		•
3	• 9VAC25-850-30 • 9VAC25-870-55 • 9VAC25-880-40	Plan Review by DEQ Certified Individual	• Form LD-445C Erosion And Sediment Control (ESC) and Stormwater Management (SWM) Certification Form • SWPPP General Information Sheet (GIS), Section I General Information, Item 15
4	• 9VAC25-880-60 Termination of General Permit Coverage • 9VAC25-880-70 Part I F	Notice of Termination	• Form LD-445D VPDES Construction Permit Coverage Termination Notice • SWPPP GIS, Section I General Information, Item 15
Stormwater Pollution Prevention Plan (9VAC25-880-70 Part II)			
5	• A.1	General Information	• Form LD-445 Construction Activities • SWPPP GIS, Section I General Information
6	• A.1.a	Copy of Registration Statement	• Form LD-445 Construction Activities • SWPPP GIS, Section I General Information, Item 3
7	• A.1.b	Notice of Coverage Letter	• SWPPP GIS, Section I General Information, Item 3 • Posted onsite with Form LD-445A (SWPPP GIS, Section I, Item 15) • A copy of the Notice of Coverage Letter is maintained along with other SWPPP documents.
8	• A.1.c, d, e	Copy of general VPDES permit VAR10	• Copy of VPDES permit with SWPPP (c) • SWPPP GIS (section 1 Note 1 narrative) (d) • ESC/SWM/Construction plans (e, 1-5)

			• Supplemental ESC Plans provided by contractor for support activities – Section I GIS note 4 (e 6) • SWPPP GIS Section I, Note 14 (rain gage) (e 7)
9	• A.2	ESC Plan	• Construction Plans, General Notes for ESC • SWPPP GIS, Section II Erosion and Sediment Control • Supplemental ESC Plan(s) provided by Contractor for onsite support activities

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
10	• A.2.c.(8)	Stabilization of disturbed areas will be initiated immediately when land-disturbing activities have ceased on any portion of the site and will not resume for a period exceeding 14 days	• SWPPP GIS, Section II, Items 2, 6, 7, 8, 9, and 14 • Project Grading Schedule • Daily Diaries • Daily Work Reports • Record Drawings
11	• A.3	SWM Plan	• Construction Plans • SWPPP GIS, Section IV Post Construction Stormwater Management • SWPPP GIS, Section VI Permanent BMP Information
12	• A.3	Stormwater Management Computations	• Located where shown on SWPPP GIS, Section IV, Item 6
13	• A.4	Pollution Prevention (P2)	• SWPPP GIS, Section V Pollution Prevention Plan • P2 Plan(s) provided by Contractor
14	• A.4.d	Identify person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity	• SWPPP GIS, Section I, Items 4, 11, and 12 • SWPPP GIS, Section III, Item 3 • SWPPP GIS , Section V, Item 3.d • P2 Plan(s)
15	• A.4.f	Providing pollution prevention awareness of all applicable wastes to personnel	• P2 Plan(s) • ESCCC training
16	• A.5	Discharges to impaired waters, surface waters with an applicable TMDL WLA, and exceptional waters	• LD445 form • SWPPP GIS, Section I, Items 6, 7, 8, 9 and 13 • SWPPP GIS, Section 2 Item 10 • Construction Plans (ESC) • P2 Plan(s)

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
17	• A.6	Qualified personnel	• SWPPP GIS, Section I, Item 11
18	• A.7	Delegation of authority	• Form LD-445H Delegation of Authority • SWPPP General Information Signature Line • SWPPP GIS, Section I, Item 11
19	• A.8	SWPPP signature	• Form LD-445E SWPPP Certification • SWPPP GIS, Section III, Item 4
20	• B	SWPPP amendments, modification, and updates	• SWPPP GIS, Section III, Item 4 • Drainage Manual, Chapter 10 • Project Grading Schedule • Daily Diaries • Daily Work Reports • Record Drawings
21	• B.4.a	A record of dates when major grading activities occur; construction activities temporarily or permanently cease on a portion of the site; and stabilization measures are initiated.	• SWPPP GIS, Section II, Items 1, 7, and 8 • Project Grading Schedule • Daily Diaries • Daily Work Reports • Record Drawings
22	• D	SWPPP availability	• Form LD-445A VPDES Construction Permit Contact Information (posted onsite) • SWPPP GIS, Section III, Items 1, 3, 4, 5, 6, and 7
23	• E	SWPPP implementation	• SWPPP GIS, Section III, Items 1, 2, and 3 • Form LD-445E SWPPP Certification • Form C-45 SWPPP Contractor Certification • Form C-107 Part I • Environmental Compliance Report
24	• F.1	Qualified personnel responsible for inspections	• SWPPP GIS, Section I, Item 11 • Form C-107 Part I

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
25	• F.2	Inspection schedule	• SWPPP GIS, Section I, Items 13 and 14 • C-107 Part I
26	• F.3	Inspection requirements	• C-107 Part I
27	• F.4	Inspection report	• C-107 Part I
28	• G	Corrective actions	• SWPPP GIS, Section III, Item 2 • C-107 Part I • Environmental Compliance Report

Appendix G – VDOT BMP Details and Special Provisions Approval Letter

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

January 12, 2021

Ms. Susan Keen, P.E.
Division Administrator
VDOT - Location and Design Division
State Location and Design Engineer
1401 East Broad Street
Richmond, Virginia 23219

Re: VDOT Special Provision Request for Bioretention Facility Media Mix

Dear Ms. Keen:

The Department of Environmental Quality (DEQ), Office of Stormwater Management received a request by the Virginia Department of Transportation (VDOT) to approve for use the "Special Provision for Bioretention Basins" (Special Provision). This Special Provision is supplemental to the 2011 and 2013 (Draft) Virginia DEQ Stormwater Design Specification No. 9 (Specification 9). The Special Provision proposes the installation of a bioretention soil media mix that varies from the bioretention soil media specified in Specification 9. The Special Provision includes an increase in inspection frequency along with additional maintenance requirements.

Documents for review and consideration were provided by VDOT to DEQ initially on December 4 and 5, 2019, with follow-up documents submitted on May 18, 2020 and June 15, 2020. The Special Provision was revised based on discussions held between VDOT and DEQ (Appendix A). Other documents provided by VDOT include a technical and explanatory memorandum (Appendix B) that summarizes the technical updates made to the Special Provision and its job mix formula worksheet, TL-144 (Appendix C).

The VDOT bioretention soil media mix was compared to both the soil media mixes in the 2011 and 2013 (Draft) Virginia DEQ Stormwater Design Specification No. 9. Other bioretention soil media mixes were also reviewed to understand an acceptable range of soil media deviations that occurs in soil media mixes across the United States.

The review determined that the composition of the VDOT bioretention soil media mix varied in composition and chemistry as compared to the Specification 9 (Appendix D). Specifically, the amount of fines is higher by 5%, and the range of the phosphorus concentration (mg/kg) as determined by the Extractable Phosphorus Mehlich 1 and 3 test is variably higher in the proposed VDOT bioretention soil media mix.

Another variation of the VDOT bioretention soil media mix is the testing method used to determine the hydraulic conductivity (K_{sat}). VDOT used a test method, known as Mesocosm Test, as compared with other ASTM test methods. The result of the Mesocosm Test yielded a slightly higher range of K_{sat} values (1 to 15 in/hr) as compared to values found in the general literature (1 to 12 in/hr). The K_{sat} value reported by VDOT may be higher due to the testing method, soil mixture, or some other factor.

DEQ considered these variations in the proposed bioretention media mix and has determined that this mix falls within an acceptable range of soil media mixes, not only as provided in Specification 9, but also in comparison to soil media mixes used in other states (e.g. North Carolina, Minnesota, New Jersey). However, because of slight differences of the proposed mix, DEQ requests the following in addition to the VDOT job mix formula worksheet (TL-144):

1) The VDOT bioretention soil media is to be mixed by a VDOT-approved vendor and only used on VDOT construction projects;
2) On-going list of vendors producing the VDOT bioretention soil media mix;
3) On-going list of UPCs and bioretention stormwater management facilities where the VDOT bioretention soil media mix is installed;
4) Post-construction maintenance plan of the VDOT bioretention soil media mix; and
5) Annual inspection reports and information on any corrective action measures taken for facilities using the VDOT bioretention soil media mix.

DEQ approves the use of the VDOT Special Provision for bioretention on a provisional basis until additional data is collected and submitted to DEQ. The bioretention soil media must meet the composition and testing parameters listed on the VDOT's job mix formula worksheet (Appendix C) and written within VDOT's Special Provision for Bioretention (Appendix A). Once a vendor composes the bioretention soil media mix and provides VDOT with the performance test results, VDOT may then approve the bioretention soil media mix for use in the field. After installation, DEQ requests that VDOT follow the agreed inspection schedule and maintenance plan for a period of five (5) years and report these findings to DEQ separately from VDOT's Annual Standards and Specifications.

If you have any questions regarding this information, please contact Robert E. Cooper, P.E. at (804) 698-4033 or e-mail at Robert.Cooper@deq.virginia.gov.

Sincerely,

Erin Ervin Belt

Erin Ervin Belt, Manager
Office of Stormwater Management

CC: File

Attachments:

Appendix A: Virginia Department of Transportation Special Provision for Bioretention Basins
Appendix B: Technical & Explanatory Memorandum VDOT Bioretention Special Provision & Comparison to BMP Clearinghouse
Appendix C: Form TL-144 (84/18) Virginia Department of Transportation Materials Division Statement of Bioretention Soil Media Job-Mix Formula
Appendix D: Summary Table of Filter Media Criteria and Testing Results for VDOT Soil Media for Bioretention

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

11/28/2016

Mr. Chris Swanson, P.E.
1401 East Broad Street
Virginia Department of Transportation
Richmond, VA 23219

Re: VDOT BMP Details and Special Provisions Application Packet

Dear Mr. Swanson:

Based upon the information provided in your revised VDOT BMP Details and Special Provisions application packet submitted to DEQ via email on 10/7/16 with the attached file titled "VDOT_BMP_Details_SPs.zip" DEQ has found these design changes to be acceptable. But there will be a restriction of use set forth in the soil media and compost amended soil specification's outlined within this submittal.

When applied each variant design/mixture of the soil media specification within a BMP specification SWM-7, SWM-8 or compost amended soils will have the following requirements:

- The application use of such standards must be preapproved by DEQ.
- It can only be used up to three times statewide per soil media mixture type.
- Once the BMP is installed VDOT will be required to perform sample monitoring of the BMP to determine the performance of the facility on nutrient load removal rates.
- If the soil media mix does not perform at the prescribed nutrient load filtration levels intended then the soil media will be replaced during the normally prescribed BMP maintenance schedule, at which time the soil media will be replaced with a mixture that is known to meet the original BMP's nutrient load reductions.
- Soil media for bioretention systems shall conform to the "*Special Provision for Bioretention Soil Media.*" With an engineered soil media consisting of 50% sand, 30% topsoil, and 20% acceptable leaf compost may be used within tree planting pits.
- Compost amended soil shall conform to the approved "*Special Provision for Compost Amended Soil.*"

Please contact me at (804) 698-4037 or benjamin.leach@deq.virginia.gov if you have any questions.

Sincerely,

Ben Leach, Manager
Office of Stormwater Management

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
BIORETENTION BASINS

I. DESCRIPTION

This work shall consist of constructing, inspecting and maintaining bioretention basins in conformity with the lines, grades, dimensions, and thickness as shown on the plans, according to these specifications and as directed by the Engineer.

II. MATERIALS

1. Media pipe drains (underdrains), Cleanouts, Inspection Ports, Wyes, Tees, and other accessories associated with the media pipe drains system shall conform to the Stormwater Miscellaneous Special Provision.

2. Aggregate required for, media pipe drains, choker layer, and sump layer, shall consist of clean, washed stone of the designated size conforming to Sections 202 and 203. Unless otherwise specified the following shall apply.

   A. Choker layer stone shall consist of No. 8 aggregate, preferably, No. 78, or No. 8P, unless an aggregate similar to No. 8 in gradation and properties is specified and approved by the Engineer.

   B. Sump layer stone shall consist of No. 57 aggregate, preferably, No. 5, or No. 56, unless an aggregate similar to No. 57 in gradation and properties is specified and approved by the Engineer.

3. Non-woven geotextile drainage fabrics shall conform to Section 245.

4. Compost amended soil shall conform to the Special Provision for Compost Amended Soil.

5. If shown on the plans, earthen berms with cut off trenches shall conform to the Stormwater Miscellaneous Special Provision.

6. Riprap shall conform to Section 414 and be of size and dimension as specified in design plans.

7. Mulch shall conform to the requirements of Section 244.02(k)9 and be free of foreign material including plant material.

8. **Bioretention soil media.**

   A. **Fine Aggregate** shall consist of natural sand or crushed stone, 100% passing the 3/8-in sieve (with a tolerance of -5%).

   B. **Topsoil (Soil Blends or Soil Fines)** shall have 100% (with a tolerance of -5%) passing the 3/8 inch sieve.

   C. **Mineral Soil Portion** shall be a combination of the Fine Aggregate and Topsoil. The resulting combination will have a texture defined by the percentage of sand, silt, and clay particles. The Mineral Soil Portion shall have no more than 25% silt plus clay and no more than 10% clay, both measurements with a tolerance of 1.5%, as determined by AASHTO T 88, Particle Size Analysis of Soils. Sand shall be inorganic soil particles with a diameter greater than or equal to 0.05 mm and less than 2 mm. It is suggested that 50% by weight of the sand fraction be

between 0.5 mm and 2 mm, inclusive, with a tolerance of 1.5%; test results on sand gradation shall be recorded but the 50% weight shall not be required of the mix. Silt shall be inorganic soil particles with a diameter of less than or equal to 0.05 mm and greater than 0.002 mm, and clay shall be inorganic soil particles with a diameter of less than 0.002 mm.

D. **Organic Amendment** shall conform to Section 244.02(j)1 Compost or other organic conditioning materials such as aged leaf mulch, with the prescribed organic matter content of at least 40% (with a -5% tolerance).

E. **Job Mix Formula.** The contractor shall submit for the Engineer's approval, a job mix formula within the following design ranges of percent by weight of the mineral soil portion of the total mix:

Component	Percent by Weight of Total Mix
Sand	75-90% test tolerance of ±1.5%
Silt plus Clay	10-25% test tolerance of ±1.5%
Clay	0-10% test tolerance of + 1.5%

The Job Mix Formula shall also show that the overall mix meets the following requirements:

Test	Method	Min	Max
Extractable Phosphorous (mg/kg)	Mehlich I Extraction Procedure* (VTM-134)	5	32
Extractable Phosphorous (mg/kg)	Mehlich III Extraction Procedure† (VTM-134)	10	78
Cation Exchange Capacity, CEC (meq/100g)	VTM-134	5.0**	-
pH	VTM-134	5.5***	8***
Saturated Hydraulic Conductivity (in/hr) mean value+	VTM-134	1	15
Organic Matter of Overall Mix (Mineral soil and organic amendment)	VTM-134		2 - 5% by weight

*When testing extractable phosphorous, either the Mehlich I or Mehlich III Extraction Procedure may be used, provided the result is compared against the appropriate min and max values.

**Test tolerance for CEC shall be -0.5.

***Test tolerance on pH shall be +/-0.1.

+ VTM-134 gives details on compiling the test results; the maximum conductivity will be based on only the average of the last 2 cycles of the test; the minimum conductivity must be achieved on every cycle. Cycle 3 of each test shall use the saltwater brine solution as per VTM-134.

The Mix shall be free of noxious weed seed, plant propagules, brush or other litter and objects greater than 3 inches in any dimension.

The Job Mix shall be submitted to the Engineer 30 days prior to use and shall include:

1. Job mix for the Bioretention Soil Media Mix.

2. Test results per VTM-134 for Bioretention Soil Media mix to include: percent mineral soils portion passing the 3/8-in sieve; sand, silt, and clay percentages of the mineral soil portion; extractable phosphorous; cation exchange capacity; organic content; pH; and saturated hydraulic conductivity.

F. **Testing**

The contractor shall provide the quality control and the testing necessary to determine conformance with the materials specifications. All testing other than the saturated hydraulic conductivity test shall be performed by an AMRL-accredited laboratory, or a laboratory certified by another equivalent nationally recognized certification body. The saturated hydraulic conductivity test shall require results be reviewed and sealed by a Professional Engineer licensed in Virginia.

The contractor shall conduct initial testing on all materials requirements as listed in Section II herein to gain approval of the Job Mix Formula (JMF) on an annual basis. Upon approval of the JMF, at a 4-month and 8-month interval, testing in accordance with VTM-134 shall be completed for:

Percent mineral soil portion passing the 3/8-in sieve; sand, silt, and clay percentages of the mineral soil portion; extractable phosphorous; cation exchange capacity; organic content; and pH.

Changes in any material source shall require a new JMF and approval.

G. **Mixing.** Bioretention Soil Media shall be mixed in an approved central mixing plant of a pugmill or other equivalent mechanical type to achieve a homogeneous mix. The mixing equipment type and method shall be described on VDOT Form TL-144.

H. **Stockpiling.** Bioretention Soil Media shall be stockpiled in accordance with Section 200.05 and Section III, Item 8 below.

III. PROCEDURES

The contractor shall meet with the Engineer before starting work on the bioretention basins. The contractor shall prepare a construction and maintenance schedule for each bioretention basin. Items to be included in the schedule are planned dates for stabilization of the facility contributing drainage area, feature and material installations, mowing frequency, erosion repair, invasive species control, trash removal, functionality checking, and inspection of facility.

1. **The contractor shall not begin construction of the bioretention basin until the contributing drainage area has been stabilized with vegetation or final pavement.** It may be necessary to block certain curb or other inlets while the bioretention area is being constructed and stabilized in order to prevent construction runoff from entering the facility. Temporary erosion and sediment controls shall be installed as needed during bioretention basin construction to divert stormwater away from the basin until it is completed and stabilized. Install protection measures such as erosion control fabrics as needed to protect side slopes from erosion during construction.

2. Excavate the basin floor with light, tracked equipment to avoid compacting the basin floor. Till or scarify the bottom six (6) inch surface of the basin floor with rotary tillers or disc harrows after final

grading to promote exfiltration. Scarify the sides of excavated area with excavating equipment equipped with a toothed bucket. Level 1 bioretention basins used as temporary erosion and sediment control features shall be cleaned of all debris and regraded to design grades before final stabilization.

If the contractor observes excessive seepage, standing water or other adverse drainage conditions in the bioretention basin after the facility has been isolated and the area has been allowed to dry, the contractor shall notify the Engineer and request an inspection.

The contractor shall clean the bioretention basin of all trash, debris, and non-native sediment deposited while the cavity was open. The basin shall be returned to the design depth; however, soil fill material shall not be used as backfill to achieve subgrade design elevation.

3. All drainage structures shall be installed according to Section 302.

4. Position each media pipe drain no more than 20 feet from the next media pipe drain. Lay perforated pipe under the length of the bioretention filter and install non-perforated pipes to connect with the storm drain system or to daylight at ultimate outfall location. Install elbows, tees, and wyes as needed for the media pipe drain configuration. Extend cleanout pipes to the surface with vented caps at the tee's and wye's.

   Pipe joints and storm drain structure connections shall be sealed watertight. Pipe sections shall be coupled using suitable connection rings and flanges. Field connections to storm drain structures and pipes shall be sealed with polymer grout material capable of adhering to surfaces. Media pipe drain pipe shall be capped at structure until of the site is completed. Media pipe drains connected directly to a storm drainage structure shall be non-perforated for at least 5 feet from the structure interface.

5. The contractor shall schedule a meeting with the Engineer to review facility subgrade conditions before installing non-woven geotextile drainage fabric on the sides of the bioretention area and as specified on the plans. Place sump layer aggregate on the bottom to the appropriate depth (minimum 3 inches) then install the perforated media pipe drain pipe and inspection ports. The contractor shall schedule a meeting with the Engineer to review connected drain system before covering the media pipe drain with sump layer aggregate and installing choker layer. After the Engineer approves the drain system, the contractor shall add the remaining sump layer aggregate. All approvals shall be on an individual facility basis. Pack the sump layer stone 3 inches above the media pipe drain pipe. Place the choker layer at the appropriate depth atop the sump layer.

6. The contractor shall verify media pipe drain layout and drain system inverts and provide finish elevations on the as built drawings. The contractor shall photo-document the facility, including subgrade before installing aggregate and after installing sub-surface drainage system.

   The contractor shall take measures to prevent fine sediment from entering the facility by covering all of the facility with non-woven geotextile drainage fabric or by other means after intermediate stone layer are installed to grade, if exposed to construction sediment, until ready to construct subsequent layers. Any contamination shall be removed before installing subsequent layers.

7. Install a two (2) foot strip of non-woven geotextile drainage fabric atop of the aggregate choker layer centered on each perforated media pipe drain segment.

8. The contractor shall photo document and record elevations of sump layer and choker layer depths and media pipe drain layout before installing bioretention soil media.

   Provide vendor certification of bioretention soil media to the Engineer in accordance with this Special Provision before delivering the material to the project. Failure to provide certification may

result in rejection of the material before or after installation, and replacement at no additional cost to the Department.

Store bioretention soil media, not immediately installed, on an impervious area or on plastic sheeting adjacent to the bioretention basin. After installing non-woven geotextile fabric, place the bioretention soil media in 8-inch lifts and spread by hand with minimal compaction to the finish plan elevation of the bioretention area. . Lightly water and roll each lift with a landscape roller to consolidate. Rake the final lift level then consolidate, saturate, then allow the bioretention soil media to settle for at least one week before installing plant materials. If the bioretention soil media surface settles below finish plan elevation, add soil media as required to achieve finish elevation before installing plant materials.

Apply a three (3) inch mulch layer to the surface of the bioretention basin, unless another surface layer is specified.

The contractor shall check for contamination, including but not limited to accumulated fine sediment or trash, after a minimum of seven days and remove if present.

If the bioretention basin is exposed to construction sediment after bioretention soil media is installed to design grades, the contractor shall cover the entire basin with non-woven geotextile drainage fabric or take other measures to prevent sediment entering the basin before mulching. Contamination, such as accumulated fine sediment or trash, shall be removed before mulching. Contaminated soil media must be removed and replaced.

9. Place sod, fabric, or non-erosive lining in the inlet channel and/or filter strips as required by field conditions or as shown on the plans. Prepare planting holes for any trees and shrubs; install vegetation and ground cover specified in the bioretention basin planting plan; mulch if required, then water the vegetation in accordance with Section 605. Install a three (3) inch mulch layer to the surface of the bioretention basin if shown on the plans.

10. The contractor shall verify the general boundaries of the contributing drainage area and the as-built inlet elevations to ensure they conform to original design. Subtle differences in site grading, drainage and paving elevations can produce hydraulically important differences for the proposed bioretention basin. The contractor and the Engineer shall clearly communicate, in writing, any needed adjustments identified during the preconstruction meeting and any adjustments required by field conditions.

11. The contractor shall notify the Engineer when the facility is completed and ready for inspection, and request an inspection. The contractor shall correct any unacceptable items. When complete, remove all sediment controls and unblock curb openings or other upstream diversions only after the Engineer approves the facility for operation. Final acceptance occurs at project completion as described in the Inspection and Maintenance section of this provision.

IV. **TOLERANCES**

1. Finished grade of subgrade shall conform to Section 305.03(c).

2. Slopes surrounding bioretention basins shall be graded to 3:1 or flatter, unless otherwise specified. All tolerances shall conform to Section 303.05(b).

3. All drainage pipe slopes and inverts shall be as defined on plans. No bubbles, bulges, or significant defections (> 1 in. vertical) will be permitted.

V. **INSPECTION AND MAINTENANCE**

The contractor shall maintain all areas or facilities in temporary or final condition by performing regular maintenance until the final project acceptance by the Engineer so that efficacy of the facilities is not degraded. Any deficiencies or damage noted by the Engineer shall be corrected at no additional cost to the Department.

Thresholds requiring plant replacement are 85% plant material survival and 100% tree survival. Re-planting shall be performed in accordance with Section 605.

The contractor shall perform required maintenance which includes, but is not limited to:

- Immediately stabilizing bare or eroding areas in the contributing drainage area or around the bioretention basin area with grass cover or other appropriate lining as directed by the Engineer. Fertilizers may be needed to promote initial planting growth in accordance with VDOT nutrient management plan program.

- Watering vegetation in accordance with Section 605 during first growing season.

- Clearing sediment buildup at curb cuts, pretreatment devices such as gravel diaphragms or pavement edges that prevent flow from getting into the bed, and correcting bypassing flows.

- Checking for any winter or salt-killed vegetation, and replacing it with hardier species as directed by the Engineer.

- Trimming and pruning vegetation in accordance with Section 605 as needed. Checking for and controlling any invasive species. Any herbicide spraying, if necessary, shall be according to Section 607.

- Repairing rill or gully erosion as directed by the Engineer.

- Checking the bioretention basin for mulch flotation, ponding, dead plants, and concentrated flows and taking appropriate remedial actions. Checking inflow points for clogging, and removing any sediment, as directed by the Engineer.

- Restoring filtration characteristics in basins with clogged or slow-draining soil media, crusted top layers, inappropriate soil media, or other causes of insufficient filtering time in accordance with these specifications and as directed by the Engineer. Testing may be required to verify infiltration rates.

- If water remains on the surface more than 24 hours after a storm, grade adjustments or media pipe drain repairs may be needed as directed by the Engineer. The contractor shall also check the surface of the filter bed for accumulated sediment or a fine crust after the first several storm events. Drain times shall be monitored by the contractor and documented. Drain times shall be less than 24 hours after a one (1) inch or greater storm event before acceptance. Drain time documentation shall be provided to the Engineer. Testing may be required by the Engineer to confirm filtration and drain time performance.

- Opening the media pipe drain observation well or cleanout (stand pipe) and pouring water into the stand pipe to verify that the media pipe drain s are functioning and not clogged or otherwise in need of repair. Standing water on top, but not in the standpipe indicates a clogged soil layer. If the media pipe drain and stand pipe contain standing water, the media pipe drain must be clogged and shall be rehabilitated.

- If the surface or filter is clogged, removing and replacing some or all of the bioretention soil media and rehabilitating in accordance with these specifications and as directed by the Engineer.

The contractor shall also provide an itemized list of maintenance activities conducted; construction record drawings shall be provided in accordance with the contract; this includes but is not limited to as built elevations on buried drains, lifts and structures, and documentation of drain times during a one (1) inch or greater rainfall event.

The Establishment period following the Installation phase shall be in conformance with Section 605.07.

VI. MEASUREMENT AND PAYMENT

Bioretention basins will be measured in square yards and will be paid for at the contract unit price per square yard. This price shall include preparing subgrade as needed, field infiltration testing, and first year warranty and maintenance period of bioretention basins. Vegetative shrubs, trees, ground cover and other plantings as shown in planting plan, mulch, surface layer, non-woven drainage fabric, choker layer, sump layer, media pipe drains, connections and associated drain system, inlet (if specified), overflow (riser or weir) and outlet structure (storm sewer pipe or channel with length required to tie in or daylight into downgradient drainage system), pretreatment options, cut-off trench, rip rap, compost amended soil (if any), topsoil and stabilization, temporary erosion and sediment control associated with facility including blocking of any inlets as needed, fertilizer and herbicides should be measured and paid for according to the VDOT Road and Bridge Specifications (2016).

Bioretention soil media will be paid for at the contract unit price per cubic yard. Bioretention Soil Media shall have the same certification statement given in Section 200.04. Such a statement shall be supplied with each shipping load to the project.

Media pipe drain (underdrain) will be measured and paid for in accordance with Section 501 and the Special Provision for Stormwater Miscellaneous and shall include sump stone and choker stone in Type 2 Bioretention Basin drain trench. Standpipes (observation wells, cleanout pipes, etc.), outlet pipes, wyes, and tees will be measured in linear feet and will be included in the media pipe drain quantity for payment. Caps and covers shall be included in the price of the media pipe drain.

Payment will be made under:

Pay Item	Pay Unit
Bioretention Basin	Square Yard
Bioretention Soil Media	Cubic Yard
Media Pipe Drain (underdrain)	Linear Foot

Technical & Explanatory Memorandum
VDOT Bioretention Special Provision & Comparison to BMP Clearinghouse

NOTE: This document summarizes the technical updates made to the VDOT Special Provision (SP) for Bioretention on 8/10/2018 with a focus on Materials. The purpose of this document is twofold: first, it compares the updated VDOT SP Aug 2018 version to the earlier version submitted to and approved by DEQ on 11/28/2016; second, it serves as a technical explanation and rationale comparing the VDOT SP to the BMP Clearinghouse specification No. 9. VDOT has developed three additional companion documents associated with the SP to assist with ensuring compliance and consistency on its projects:

1.) Special Provision for Bioretention Basins;

2.) Virginia Test Method (VTM-134) Bioretention Soil Media Test;

3.) Statement of Bioretention Soil Media Job Mix Formula form (TL-144);

4.) Standard Insertable Microstation Sheets as template to prepare construction documents.

A summary of the updates to the SP is provided below. Subdivision 8 Bioretention Soil Media (BSM) of Section II Materials has been revised for the following reasons:

- **Coarse Sand** – The BMP Clearinghouse specification No. 9 Bioretention (herein Spec No. 9) references at least "*75% of the sand fraction should be coarse or very coarse sand*". VDOT terminology and classifications for sand and as described in the Road & Bridge specifications vary from Spec No. 9. To avoid confusion and to provide a more direct measurement, particle size diameters were specified.

- **Fine Aggregate** – The VDOT SP utilizes the existing VDOT Road & Bridge Specifications (R&B Spec) section 202 to align aggregate materials, such as the choker layer stone and sump layer, with the stone types referenced in Spec No. 9. The definition in the VDOT SP was revised in the Aug 2018 version to be simpler and more direct, as the adjectives in the earlier VDOT version were not well defined. The mica content requirement was removed, as this would be difficult, costly, preclude some materials, and was originally included in Spec No. 9 because mica can block water filtration. However, since VDOT has developed and adopted a performance based approach - via VTM-134 which measures infiltration rates of the media – results will ensure the mica content and other components, do not overly inhibit infiltration rates. Typical tolerances are included on topsize.

- **Drainage and Other Material Specs** – Several Spec No. 9 materials were explicitly cross-referenced to existing VDOT R&B specifications for consistency and standardization in the VDOT SP. These include Non-woven Geotextile Drainage Fabric (R&B Spec Section 245), Compost (R&B Spec 244.02(j)1), Riprap (R&B Spec Section 414), and Mulch (R&B Spec Section 244.02(k)9). In addition, to supplement Spec No. 9, a specification for underdrains and accessories was created.

- **Soil Fines** – This use of the term "Soil Fines" was replaced with the use of the primary terms Topsoil or Soil Blend. The textural classification was removed as being somewhat variable on topsoil. Clay and Silt are still referenced separately within. A typical tolerance was included on topsize.

- **Mineral Soil Portion** – Ranges on fractions increased somewhat from the earlier SP based on initial Producer trials of mixes that passed VTM-134 infiltration testing but where original fractions could not quite be met. Tolerances based on trial mixes in 2018 are now given. The sand as a percent by weight of the mineral soil portion is a requirement and reported on TL-144. The requirement on the mineral particle size gradation associated with sand was removed, however a suggested fraction is given and the requirement to record the data is included which will be helpful data going forward. The VDOT SP allows for a slightly higher Silt plus Clay content of 25% versus 20% of Spec No. 9. As noted in Spec No 9: "*it is important for filter media P removal efficiency that some amount of mineral fines (10% - 20%) be present as long as the texture and permeability specifications cited herein are met. This is important due to the fact that soil organic matter per se is not active in adsorption of P."* The performance based test via VTM-134 should provide assurances and allay concerns related to infiltration rate limitations resulting from the additional 5%.

- **Organic Amendment (formerly Organic Matter)** – Revised SP to use the term "organic amendment" to avoid confusion between overall organic matter content of the mix which comes from both organic amendment (e.g. compost) and topsoil. Reference existing VDOT R&B Spec on Compost, Section 244.02(j)1. Revised organic matter content slightly to 2-5% based on results of initial Producer trials; and gave tolerance of -5% on the 40% VDOT organic matter content requirement of compost. Also included a specific example, aged leaf mulch, for a common "other" organic conditioning material.

- **% Mineral Soil Portion removed** – Previously, the VDOT SP included a table on the overall Job Mix Formula with a percent for mineral soil portion of 95-98%, and percent for organic matter of 2-5%. The former has been removed, and the 2-5% organic matter has been shifted to the properties table at the end of the section. It was realized that having these two tables in the earlier VDOT SP version was a confusing double-counting requirement. Since the topsoil portion of the mineral soil portion also contributes organic matter, and once the % organic matter is known and meets the required range, the mineral soil portion is effectively what's left over in the mix. And because of this, it does not need to be measured. It also presented a difficult practical problem for Producers, as mixing the heavy mineral soil portion with very light organic amendment in a by weight mixture and then measuring organic content of the entire mix was nearly impossible.

The following updates were made to Section VI Measurement and Payment and VTM-134, respectively:

- **Bulk Density Test** – Removed this test entirely. This was included originally by VDOT to convert volume to weight as water content can potentially affect weight and payment. However, it was determined this is between Producer and Contractor, so we removed it.

- **Saturated Hydraulic Conductivity** (Infiltration test) – We decided due to hydraulic compaction and conditioning, the last 2 cycles of 8 on each of 6 tubes are the most representative results, and thus only those should be averaged to give the result on hydraulic conductivity. Also, revised the upper end limit from 12 in/hr to 15 in/hr based on variance in test results of initial trials, and because of the added step of the salt rinse. Spec No. 9 states there should be a MIN infiltration rate of 1 to 2 in/hr, noting that "A proper soil mix will have an initial infiltration rate that is "significantly higher".

Form TL-144 (84/18)

VIRGINIA DEPARTMENT OF TRANSPORTATION

MATERIALS DIVISION

STATEMENT OF BIORETENTION SOIL MEDIA JOB-MIX FORMULA

Submit to the District Materials Engineer, Virginia Department of Transportation. Approval must be received by the Contractor from the Materials Section before work is begun. This job mix design is approved for all projects of the Department for the type of mix and the calendar year shown below.

Job Mix ID No. _____

Date _____ Calendar Yr. _____

Producer Name & Plant Location _____ Phone _____

Materials				Kind	Source
Approval Phase	A	B*			
Mineral Soil			%		
Organic Amendment			%		

See VTM-134 for all test procedures.

Job-Mix Sieves	Total % Passing		Design/Spec. Range (Tolerance)	Other Tests	Total % Passing		Design/Spec Range
	Lab JMF	Production JMF			Lab JMF	Production JMF	
Approval Phase	A	B*			A	B*	
Sand in mineral soil portion			75 – 90% (1.5%)	Extractable Phosphorus (mg/kg) Mehlich I			5 - 32
Silt and Clay in mineral soil portion			10 - 25% (1.5%)	Extractable Phosphorus (mg/kg) Mehlich III			10 - 78
Clay in mineral soil portion			0 - 10% (1.5%)	CEC (meq/100g)			Min 5.0 (-0.5%)
Organic Matter Portion of total mix			2 - 5%	pH			5.5 – 8 (+/-0.1%)
3/8-in Sieve Mineral Soil			100% (-5%)	Sat. Hydraulic Conductivity (in/hr)		N/A	1 - 15
Mineral Soil Gradation			Percent between 0.5 and 2.0 mm (1.5%)	Organic Matter Content of Organic Amendment			Min 40% (-5%)

Method of Mixing (pug mill or other):

Attach test results from certified labs, conductivity results sealed by VA PE, and calculations.

MATERIALS DIVISION USE ONLY

Remarks

Checked By: _____

Approved tentatively subject to the production of material meeting all other applicable requirements of the specification.
*Note: Part B "Production JMF" and corresponding material percentages will be filled out by the DME upon receipt of the additional requirements of the producer at 4-month and 8-month intervals, per VTM-134.

Copies: State Materials Engineer
District Materials Engineer
Project Inspector
Sub-Contractor and/or Producer

Approvals

Part A:		Date:
Part B:		Date:

Summary Table of Filter Media Criteria and Testing Results for VDOT Soil Media for Bioretention

Filter Media Criterion	Description	Standard(s) DEQ 2013**	VDOT Soil
General Composition	Filter media must have the proper proportions sand, fines, and organic matter to promote plant growth, drain at the proper rate, and filter pollutants.	80%–90% sand; 10%–20% soil fines; maximum Clay content: 10% 3%–5% organic content	75-90% sand 10-25% Silt plus Clay Clay 0-10% 2% to 5% organic content
Sand	Medium to coarse aggregate	> 2.0 mm and < 9.5 mm Minor amount per graduation curve** >75% being coarse or very coarse sand. (<2.0 and >0.5mm)** Mica <5%	= >0.05 mm and < 2 mm 50% between 0.5 mm and 2 mm
Topsoil (Silt+Clay)	Loamy sand, Sandy Loam, or Loam Based on USDA Textural Triangle	Grain size between 0.05 to 0.002 mm	Silt- =<0.05 mm and >0.002 Clay-less than 0.002 mm
Organic Matter	Stable, well-aged, clean compost from Leaf litter, humus, peat moss	Specification #4-Compost Amended Soils	Section 244.02(j)1- VDOT Standard
P-Index* or Phosphorus (P) content	Filter media with high P levels will export P through the media and potentially to downstream conveyances or receiving waters.	P Index of 10–30* or Mehlich I 5–15 mg/kg or Mehlich III 18–40 mg/kg	Mehlich I 5-32 mg/kg Mehlich III 10-78 mg/kg
Cation Exchange Capacity (CEC)	The CEC increases with increasing soil organic matter (natural humic substances) and clay mineral content.	CEC: >5 milliequivalents per 100 grams	CEC: Min 5 milliequivalents per 100 grams

	CEC decreases with lower pH.		
Permeability (K_{sat})	Refers to the hydraulic conductibility (K_{sat}) of the filter media.	Suggested target Ksat = 1 to 2 inches/hour. Rates will most likely be higher, with Initial rates up to 12 inches/hour anticipated. Not a requirement.	Ksat = 1 to 15 in/hr.
pH	Soil pH influences nutrient availability and microbial populations.	Between 5.5 and 8.0** N/A for 2011 version	N/A
Soluble Salts	Filter media with high levels of soluble salts can injure or kill plants and can clog the filter media	Less than 2.0 mmhos/cm and always below 4.0	N/A

*** Virginia Phosphorus Index Version 2.0 Technical Guide 2005**

**** Sand gradation table and sizes (sieve) ranges only for 2013 draft Spec; N/A for 2011 DEQ Spec.**

Sand gradation curve – Spec 9 (draft 2013 only, N/A for 2011)**

Sieve	Size	% Passing
3/8 in	9.50 mm	100
No. 4	4.75 mm	95 to 100
No. 8	2.36 mm	80 to 100
No. 16	1.18 mm	45 to 85
No. 30	0.6 mm	15 to 60
No. 50	0.3 mm	3 to 15
No. 100	0.15 mm	0 to 4
Effective Particle size (D10) > 0.3mm Uniformity Coefficient (D60/D10) < 4.0		

Appendix H – IIM LD-256

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Virginia Stormwater Management Program	NUMBER: IIM-LD-256.2
SPECIFIC SUBJECT: VDOT Oversight Responsibilities for VDOT projects with coverage under the General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activities and other Regulated Land Disturbing Activities	DATE: DRAFT
	SUPERSEDES: IIM-LD-256.1
APPROVAL: Susan H. Keen, P.E. State Location and Design Engineer Approved _____, 2021	

Changes are shaded.

CURRENT REVISION

This is the third version of the Instructional and Informational Memorandum (IIM). Changes have been made throughout the memorandum for clarity.

EFFECTIVE DATE

Unless otherwise identified herein, the information and directions contained in this IIM are effective upon receipt.

1.0 PURPOSE, NEED AND PROJECT APPLICABILITY

The primary application of this IIM is to all VDOT regulated land disturbing activities that equal or exceed one (1) acre of land disturbance and are covered under the General VPDES Permit for Discharges of Stormwater from Construction Activities (Construction General Permit or CGP). Projects which are less than 1 acre of disturbance individually, but which are part of a larger common plan of development (with cumulative disturbance exceeding 1 acre) are also required to obtain coverage under the

DRAFT

Construction General Permit. In addition, this IIM focuses on VDOT regulated land disturbing activities that are between 10,000 square feet (or 2500 square feet in the Chesapeake Bay Preservation Area) and one (1) acre in area and occur within VDOT's service area as defined by VDOT's VPDES Individual Permit for Discharges of Stormwater from its Municipal Separate Storm Sewer System (MS4). These activities are considered secondary in that the frequency of inspection (further discussed in this IIM) may be reduced given the project's scope, nature, and perceived risk to VDOT's other VPDES permit (the MS4 Individual Permit).

This IIM outlines the policy and guidelines for those VDOT projects that are performed by state forces or by contract, including those developed/constructed under the Design-Build (DB) process or as part of the or under the Capital Outlay Program; and outlines permit compliance requirements, VDOT's permit oversight responsibilities, reporting procedures, and enforcement efforts.

Nothing in this IIM shall be construed as eliminating or changing:

- The established procedures for Erosion & Sediment Control (ESC) and Stormwater (SWM) Plan development, approval, and modification as identified in IIM-LD-195, IIM-LD-242, and the VDOT Drainage Manual.
- The requirements for the project team to complete and certify the Construction Runoff Control Inspection Form (CRCIF aka C-107 Part I form).
- The requirement for the VDOT Area Construction Engineer (ACE) or designee to complete and certify the C-107 Part II form. Note: see the notes section of the form for detailed instructions on completing and certifying the form
- The requirements in Environmental Division's EM-COMP-420, which outlines the established policy, procedures, and responsibilities, relating to the Environmental Compliance Assistance Program (ECAP).

2.0 ROLES AND RESPONSIBILITIES

District NPDES Coordinator – The District NPDES Coordinator shall serve as the single point of contact for all projects regarding environmental compliance. All concerns or questions can be communicated to the District NPDES Coordinator regardless of implication across multiple environmental areas. The intent is to eliminate confusion and streamline project oversight reviews. It will be the responsibility of the District NPDES Coordinator to communicate with other functional areas such as ECAP to minimize the need for project personnel to discern the difference.

The District NPDES Coordinator will operate under the authority and as the District representative of the CGP signatory, the State L&D Engineer. The District NPDES Coordinator will coordinate with the District Environmental Manager (DEM) regarding the DEM's assignment of an Environmental Compliance Inspector (ECI) to projects in accordance with the ECI assignment guidelines (see EM-COMP-420).

The District NPDES Coordinator will be certified by the Virginia Department of Environmental Quality (DEQ) as a Combined Administrator in both ESC and SWM, also known as a Dual Combined Administrator.

NPDES Coordinator Designee – If a designee is assigned by the District NPDES Coordinator, the individual will have the same responsibilities and qualifications as the District NPDES Coordinator. The designee shall be certified by DEQ, at a minimum, as an ESC and SWM inspector, also known as a Dual Inspector.

To provide consistency to a project, any designee shall remain the same individual throughout the project to the maximum extent practicable. The District NPDES Coordinator shall notify the Area Construction Engineer (ACE) and Construction Manager (CM) of any changes to the designee prior to performing evaluations.

Central Office (CO) MS4 Staff shall serve as the NPDES Coordinator Designee for all CO-led projects such as Capital Outlay and Total Maximum Daily Load (TMDL) retrofit projects. Central Office MS4 Staff will notify the District NPDES Coordinator and the District Project Development Engineer (DPDE) prior to inspecting a project. These CO-led projects receive a color classification; however, the lines of communication differ from those identified in Section 7.0. Central Office MS4 Staff will communicate the rating to the District NDPES Coordinator, the DPDE, and the applicable Central Office project proponent.

3.0 PRE-CONSTRUCTION MEETING

The District NPDES Coordinator or their designee will coordinate with any assigned ECI in advance of and shall attend all applicable pre-construction meetings to ensure the project team is aware of the CGP and/or ESC requirements. The assigned ECI will also attend and communicate requirements of any water quality permit and/or other environmental commitments.

Material to be covered by the District NPDES Coordinator or their designee will be dependent on the specific project, but general topics to be covered may include:

- Identification of District NPDES Coordinator or designee
- Discussion on limits of disturbance and avoidance areas
- Utilization of off-site support areas
- Requirements for documentation and recordkeeping including grading logs
- Stormwater Best Management Practice (BMP) Installation
- Requirements for modifications of the SWPPP (ESC, SWM, and Pollution Prevention (P2) Plans) and the approval process, including phasing
- Project close-out and termination requirements, including final stabilization and BMP acceptance (including record drawings, shop drawings, as-built documents as required)

Any concerns of the contractor regarding CGP requirements, including the ESC Plan, should be communicated at the time of the pre-construction meeting.

4.0 EVALUATION OF PROJECT IMPLEMENTATION

The District NPDES Coordinator or designee will periodically evaluate ESC and SWM compliance on all applicable projects, as explained in Section 1.0, through an independent documentation review and/or field inspection. The evaluation will be two-pronged in its scope. The District NPDES Coordinator or designee will evaluate the project to 1) determine if the project has, or should have, self-identified and self-corrected deficiencies (herein referred to as project-identified deficiencies) and 2) confirm deficiencies previously noted by the Coordinator or designee have been corrected (herein referred to as Coordinator-identified deficiencies).

The scope and extent of the evaluation will be determined by the District NPDES Coordinator or their designee. The evaluation could be a cursory review of field conditions, a SWPPP documentation review, or a fully encompassing inspection following the framework of C-107 Part I form. The District NPDES Coordinator or their designee will communicate the level of evaluation that will be performed when arriving on-site. The District NPDES Coordinators inspections will be utilized to satisfy the periodic compliance inspections requirements in VDOT's Municipal Separate Storm Sewer System (MS4) Individual Permit, also referenced in VDOT's Annual ESC and SWM Standard and Specifications.

Compliance with the CGP and VDOT's Annual ESC and SWM Standards and Specifications (and all parts thereof) is expected throughout the duration of CGP coverage.

Compliance solely resides with the project by implementing and maintaining a compliant SWPPP including the ESC Plan. As such, an emphasis will be placed on project-identified deficiencies, and what the project has done to correct those deficiencies. If it is evident to the District NPDES Coordinator or designee that the project has repeatedly failed to identify the need for corrective action, the District NPDES Coordinator or their designee will initiate enforcement efforts as specified in Section 7.0.

The District NPDES Coordinator or designee will coordinate on-site with the CM or designee to take corrective actions and report issues back to the District NPDES Coordinator, as applicable. If issues are noted during the inspection and the project has failed to perform the necessary corrective action, the Coordinator will initiate enforcement efforts as specified in Section 7.0.

The Coordinator and their designee will utilize a cloud-based database that is provided by VDOT Central Office and is accessible in the field using mobile devices.

While the ACE maintains responsibilities to complete the C-107 Part II form, the District NPDES Coordinator's inspection can be used by the ACE to satisfy the C-107 Part II form provided it is within the scope and timeframe as required by the C-107 Part II form.

5.0 PROJECT CLOSE-OUT AND ACCEPTANCE

Requirements for BMP installation and acceptance have been defined in the latest version of IIM-LD-195. In addition, the District NPDES Coordinator or their designee will evaluate adherence to these BMP installation and acceptance requirements. Failure to adhere to these requirements shall initiate enforcement efforts as specified in Section 7.0.

The District NPDES Coordinator or their designee will help facilitate BMP acceptance at project close-out which allows the ACE or designee to certify the BMP is constructed per plans.

6.0 REGULATORY (DEQ/EPA) COORDINATION AND REPORTING

6.1 Regulatory Inspections

During any oversight inspections of VDOT land-disturbing activities by DEQ, the United State Environmental Protection Agency (EPA), or other regulatory agencies, compliance with the CGP, VDOT's MS4 permit, and VDOT's Annual ESC and SWM Standards and Specifications (and all parts thereof) will be expected.

VDOT CO will maintain and share a distribution list of ACEs and District NPDES Coordinators with DEQ staff for their use and reference. The intent for sharing this with DEQ staff is to have all DEQ inspection reports sent to the ACE or designee and the District NPDES Coordinator who will in turn provide to the DEM, where findings could affect the ECAP. If ECAP is associated in the DEQ report, it will be the responsibility of the District NPDES Coordinator to communicate with and incorporate input from the ECI within the DEQ established timeframe. It will be the responsibility of the Contractor's Project Manager to implement the necessary corrective action to address all deficiencies noted in the DEQ report.

Failure to address any deficiencies to the satisfaction of DEQ within the allowable timeframe shall initiate enforcement efforts as specified in Section 7.0.

6.2 Regulatory Communication and Reporting

When VDOT is the permittee under the CGP, VDOT will be responsible for all regulatory correspondence and communication with DEQ for CGP related matters. External

entities including contractors shall not contact or report to DEQ without prior consent and approval from VDOT.

To facilitate the regulatory reporting requirement of offsite activities to DEQ, the District NPDES Coordinator will be responsible for submitting (via the ProjectWise Central Office MS4 folder) the portion of LD 445 and any related documentation to the Central Office VPDES Permit Coordinator for any offsite support activities located outside of VDOT R/W or easement which are identified after initial permit coverage.

For any deficiency identified by DEQ that requires corrective action, the contractor shall provide the CM and the District NPDES Coordinator a corrective action plan to address all deficiencies identified. The plan shall be provided within 3 business days of receiving the DEQ report, which will allow VDOT sufficient time to review, comment, and request any additional information, while allowing the contractor sufficient time to perform the corrective action.

Expected amounts of sediment discharge that pass through an ESC measure are not required to be reported to DEQ. For example, turbid water and sediment is expected to be discharged from a sediment basin constructed per specification which is, at best, 60% effective in trapping sediment during large storm events (those which cause flow from the outfall pipe) or during periods of minimal vegetative cover at a construction site However, there are instances on VDOT CGP-permitted projects where reporting to DEQ is appropriate or necessary. The District NPDES Coordinator , in consultation with the State Location & Design (L&D) Engineer, the District Project Development Engineer (DPDE), or the District Construction Engineer (DCE), will determine if self-reporting to DEQ is required unless the contractor is obligated to report a spill or dumping occurrence in accordance with Section 107.16(b)1 of the 2020 VDOT *Road and Bridge Specifications*. In cases where the contractor is obligated to report, the contractor shall coordinate their reporting with the VDOT CM and the District NPDES Coordinator to minimize duplicative efforts.

There will be two general types of pollutant discharges that result in notification or reporting to DEQ:

Type 1: Is typically confined to a discharge of sediment and the cause of the discharge was something generally beyond the control of the project resulting in a downstream/down-property impact. Examples are:

a. The project is implementing a compliant ESC plan with proper implementation, maintenance, and documentation efforts, but something beyond the project's control like a large storm event causes an excessive amount of sediment loss that is likely to cause a downstream impact (such as sediment flowing over or around a properly implemented control) or that is likely to cause down-property impacts (such as a discharge to a public water supply).

b. Notification to DEQ shall closely follow the elements of *Part III - Section G* of the CGP including 24-hour notification, and a 5-day written report with the

elements as identified in *Part III - Section G*. The 5-day written report can be provided within 24 hours if all elements of the report are included. Notification to DEQ is considered to be for awareness purposes only and is not considered a violation of the CGP. After initial notification to DEQ (by email for tracking purposes), no additional reporting is expected unless follow-up is requested by DEQ.

Type 2: This type of discharge can include sediment, chemicals, waste products, or other pollutants that are improperly managed, stored, or disposed of that cause a pollutant to reach, or has the potential to reach, a waterway. This type is different from a **Type 1** in that the discharge was due to an operational deficiency of the project. This is considered a possible violation of the permit and will follow the noncompliance reporting requirements of *Part III - Section G* of the CGP. In addition to a 24-hour notification, the reporting includes submittal of a follow-up written report to DEQ within 5 days of discovery. The written report, to be developed by the ACE or project team, should include a description of the discharge and steps taken to reduce future occurrences.

a. In the case of an oil or chemical discharge, the contractor is obligated to report a spill or dumping occurrence in accordance with Section 107.16(b)1 of the 2020 Road and Bridge Specifications. Examples include:

    1. Wastewater from washout of concrete;

    2. Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

    3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

    4. Oils, toxic substances, or hazardous substances from spills or other releases;

    5. Soaps, solvents, or detergents used in equipment and vehicle washing; or

    6. Other discharges that causes a fish kill.

    The report should be developed in coordination with the District NPDES Coordinator.

b. In the case of a sediment discharge, this type is different from a **Type 1** sediment discharge in that the discharge was due to a deficiency in ESC measures that were missing or improperly installed/maintained. This deficiency should be substantiated through project documentation such as previous inspection records by the project and/or the District NPDES

Coordinator or their designee. The report shall be developed in coordination with the District NPDES Coordinator.

7.0 COMMUNICATION AND ENFORCEMENT EFFORTS

Every evaluation that is performed by the District NPDES Coordinator or designee will receive a color-coded compliance description. In general, the color classification (see last page of IIM) signifies where the ownership for ESC and SWM compliance lies and who grades the project's attention to project-deficiencies. The color classification will dictate the level of internal and external communication that is required as well as enforcement efforts that may be necessary. Each color category is described in the following table. The actual or perceived attention to compliance will factor into any color coding change and is based on the District NPDES Coordinator's best professional judgment. For example, a history of non-compliance by the project team, including the contractor, can change the color classification of the project.

The color classification will be recorded within the NPDES inspection database. The date assigned to the color classification will be the date at which a rating is communicated to the project team in either verbal or written form. This is necessary in the event the District NPDES Coordinator requests additional information before assigning a color and/or seeks input from management.

ACE's and DCE's still have the authority to shut down a project, at their own discretion, without a coordinated consensus as described in this IIM.

It will be the responsibility of the District NPDES Coordinator and the management team engaged for each color classification to assess when a return to "green" classification is appropriate. While a project may 'jump' a color classification category with increasing engagement (e.g. green to orange), a project decreases incrementally, or one color at time, with decreasing engagement (e.g. orange to yellow). Changes to project color classifications may be changed as project conditions dictate to reflect current conditions with the process outlined herein.

	GREEN *Proactive, Project Team Engaged*	**YELLOW** *District Leadership Engaged*	**ORANGE** *VDOT Central Office Divisional Leadership Engaged*	**RED** *VDOT Executive Leadership Engaged*
General discussion on what could prompt the color classification	The project is implementing a compliant SWPPP by self-identifying and self-correcting deficiencies (project-identified deficiencies) **And** The project is correcting deficiencies noted by the District NPDES Coordinator (Coordinator-identified deficiencies) or regulatory agency within allowable timeframes.	The project has failed to address any deficiencies to the satisfaction of a regulatory agency within the allowable timeframe **Or** The project has repeatedly failed to identify similar deficiencies that were previously documented by the project and/or the District NPDES Coordinator *(*See notes below)* **Or** The project has failed to implement the SWPPP such as failure to install silt fence or a sediment trap as required by the ESC Plan *(*See notes below)* **Or** The project has failed to perform the necessary corrective action that was identified by the project on the C-107 reports and/or by the District NPDES Coordinator *(**See notes below)* **Or** The project has a Type 1 self-reporting incident. *The color classification is for purposes of ensuring VDOT management is aware that DEQ has been notified. The color classification is not an indication of a deficiency.*	A previous yellow classification has not been addressed **Or** The project has repeatedly failed to address similar yellow incidents. **Or** The project has a Type 2 self-reporting incident. **Or** The project has received a Warning Letter that has been issued by a regulatory agency. **Or** Egregious non-compliant findings are documented. Examples include land disturbance without a construction general permit when it is required or when a support facility is being used outside the limits of disturbance without the necessary permit coverage or permit modifications taking place.	The project has received a Notice of Violation that has been issued by a regulatory agency **Or** Systematic non-compliant findings that necessitate additional intervention from executive leadership
Discussion on the level of communication with management team that may be warranted	Routine correspondence between project team, District NPDES Coordinator, and designee	The District NPDES Coordinator will notify the CM, the ACE, DCE, and District Project Development Engineer (DPDE) of the project's status. The DCE and DPDE will communicate to the District Administrator following District protocols. The District NPDES Coordinator, in consultation with the State Location & Design (L&D) Engineer, the District Project Development Engineer, or the District Construction Engineer (DCE), will determine if self-reporting to DEQ is required under the CGP.	The District NPDES Coordinator will notify the same individuals as identified in yellow in addition to the State L&D and Construction Engineers. The District NPDES Coordinator, in consultation with the State Location & Design (L&D) Engineer, the District Project Development Engineer, or the District Construction Engineer (DCE), will determine if self-reporting to DEQ is required under the CGP.	The District NPDES Coordinator will notify the same individuals as identified in yellow in addition to the State L&D and Construction Engineers. The District NPDES Coordinator, in consultation with the State Location & Design (L&D) Engineer, the District Project Development Engineer, or the District Construction Engineer (DCE), will determine if self-reporting to DEQ is required under the CGP.
Discussion on the level of enforcement that may be warranted	N/A	The District NPDES Coordinator will evaluate the need for increased oversight inspections.	The District Administrator will consider possible shut down (partial or full) of the project to address the deficiencies: either grading activities or all project activities in consultation with the State L&D and Construction Engineers and the Environmental Division Director.	The project will be shut down in some capacity: either grading activities or all project activities as determined by the District Administrator in consultation with the State L&D and Construction Engineers and Environmental Division Director.

The following instances or deficiencies, in general, can prompt an escalation of color classification changes.

- Failure to install stormwater BMPs or erosion and sediment controls per plan(s)*
- Failure to conduct required inspections including missed inspections*
- Incomplete or improper inspections*
- Incomplete SWPPP or not available for review*
- Stormwater BMPs or erosion and sediment controls improperly installed or maintained or functioning*
- Operational deficiencies**
- No state permit registration and is operating without a required CGP

The actual or perceived attention to compliance will factor into the color-coding change and is based on the District NPDES Coordinator's best professional judgment. For example, a history of non-compliance by the project team, including the contractor, can change the color classification of the project.

- Contractor has not actively sought to identify and correct potential deficiencies as indicate by field conditions (including transition of phasing)
- Contractor has been unresponsive
- Conditions in the field are a clear violation of permit conditions

Appendix I – IIM LD-251

VIRGINIA DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN DIVISION

INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT:	NUMBER:
Virginia Stormwater Management Program	IIM-LD-251.6
SPECIFIC SUBJECT:	DATE:
Application of the VSMP Regulations as it relates to utilization of Nutrient Credits as an off-site compliance option	XXXX XX, 2021
	SUPERSEDES: IIM-LD-251.5
APPROVAL: Susan H. Keen, P.E. State Location and Design Engineer Approved	

Changes are shaded.

CURRENT REVISION

- Changes were made in the following section:
  - DETERMINATION OF APPLICABILITY

EFFECTIVE DATE

- These instructions are effective upon receipt.

ACRONYMS

- ASD – Administrative Services Division
- BMP – Best Management Practice
- DCR – Department of Conservation and Recreation
- DEQ – Department of Environmental Quality
- EPA – Environmental Protection Agency
- HUC – Hydrologic Unit Code
- IFB – Invitation for Bid
- IIM – Instructional and Informational Memorandum

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- MS4 – Municipal Separate Storm Sewer System
- SWM – Stormwater Management
- SWCB – State Water Control Board
- TMDL – Total Maximum Daily Load
- VDOT – Virginia Department of Transportation
- VSMP – Virginia Stormwater Management Program

DEFINITIONS

- **Basin** – See tributary.
- **Hydrologic Unit Code** – A watershed unit established in the most recent version of Virginia's National Watershed Boundary Dataset. For additional information, go to: http://www.dcr.virginia.gov/soil_and_water/index.shtml
- **"Land Disturbing Activity" or "Land Disturbance"** – A manmade change to the land surface that potentially changes its runoff characteristics including any clearing, grading or excavation associated with the land disturbing activity.
- **Tributary** – Those river basins for which separate tributary strategies were prepared pursuant to § 2.2-218 and includes the Potomac, Rappahannock, York, and James River Basins, and the Eastern Coastal Basin, which encompasses the creeks and rivers of the Eastern Shore of Virginia that are west of Route 13 and drain into the Chesapeake Bay. For areas outside of the Chesapeake Bay Watershed, "tributary" includes the following watersheds: Albemarle Sound, Coastal; Atlantic Ocean, Coastal; Big Sandy; Chowan; Clinch-Powell; New Holston (Upper Tennessee); New River; Roanoke; and Yadkin.
- **Total Maximum Daily Load** – A regulatory term in the U.S. Clean Water Act, describing the maximum amount of a pollutant that a body of water can receive and still meet water quality standards.

BACKGROUND

The VSMP regulations require water quantity controls to prevent downstream flooding and erosion and quality controls that limit the discharge of the nutrient phosphorus, a keystone pollutant. BMPs are installed in conjunction with development projects to meet water quantity and quality criteria. With the more stringent Part IIB Technical Criteria and spatial restrictions of linear projects, the siting of BMPs can often be challenging. The use of offsite compliance options, including the purchase of certified nutrient credits, may be a tool that can be used in addition to, or in lieu of, traditional onsite BMPs for achieving post-development water quality requirements. The purchase of nutrient credits may eliminate the need for the purchase of additional right of way or permanent easement and relieve the Department of future maintenance costs. The purchase of nutrient credits to address post-construction water quality reduction requirements for construction activities **shall** be considered the preferred alternative when available and economically feasible.

Listed below are other offsite options that can be used to address post-construction water quality reduction requirements for construction activities:

- Participation in a local watershed comprehensive stormwater management plan, or
- Participation in a locality pro rata share program, or
- Use of other VDOT properties within the same or upstream 6th Order (12 digit) HUC as the project, or (with DEQ approval) within the same basin / tributary as the project, or
- Other offsite options, as approved by the DEQ.

The use of these other off-site compliance options is outside the scope of this IIM.

The Chesapeake Bay Watershed Nutrient Credit Exchange Program (Code of Virginia §62.1-44.19:14 et seq.) allow regulated land disturbance activities to utilize offsite options to achieve post development water quality criteria. The purchase of nutrient credits cannot be used to address water quantity control requirements. Nutrient credits are generated by Nutrient Credit Banks through the construction of BMPs, or more typically, through land use conversion (e.g. converting crop land to forest). Nutrient Credit Banks are certified by the SWCB and regulated by the DEQ. For a map of current Bank locations, go to:
http://www.virginiadot.org/business/locdes/nutrient_credits.asp

In order to utilize these certified nutrient credits, several steps must be performed. This IIM summarizes those steps and identifies other items to consider when determining the feasibility of using nutrient credits to satisfy water quality requirements.

DETERMINATION OF APPLICABILITY

In order for the project to qualify for the use of nutrient credits, the project must meet one of the following criteria:

1. The project area contains less than 5-acres of land disturbance, or
2. The post-construction phosphorus water quality reduction requirement is less than 10 pounds per year, or
3. At least 75 percent of the required phosphorous nutrient reductions are achieved onsite, or
4. In accordance with § 62.1-44.15:35 D 3 of the Stormwater Management Act, by petitioning to DEQ in writing demonstrating the following (i) alternative site designs have been considered that may accommodate onsite best management practices, (ii) onsite best management practices have been considered in alternative site designs to the maximum extent practicable, (iii) appropriate onsite best management practices will be implemented, and (iv) full compliance with post development nonpoint nutrient runoff compliance requirements cannot practicably be met onsite.

Where approval from the DEQ is required, the District Hydraulics Engineer shall forward the documentation to the State Water Resources/MS4 Engineer. The State Water Resources/MS4 Engineer will then coordinate with the DEQ Central Office to secure the necessary approvals. Where DEQ consultation or determination is required, appropriate time should be allotted for planning purposes.

If criterion #1, #2, or #3 are satisfied, reduction requirements may be achieved through purchase of nutrient credits without prior approval from DEQ.

The Nutrient Credit Use Flow Diagram included at the end of this IIM provides a simplified means of determining a project's eligibility for utilizing the purchase of nutrient credits.

Projects Utilizing the Part IIB Technical Design Criteria - phosphorus reduction requirements shall be applied independently within each 6th order HUC. If a project is discharging into two different 6th order HUCs, each off-site condition limitations documented in 9VAC25-870-69.B.3 (i.e. <5 acres or <10 pounds) can be applied independently to each 6th order HUC.

PRE-EVALUATION PROCESS TO UTILIZE NUTRIENT CREDITS

In determining the feasibility of the use of nutrient credits to satisfy a project's water quality requirements, a pre-evaluation must be completed by the District Hydraulics Engineer. This pre-evaluation must occur prior to the Public Hearing milestone to identify any limitations that could exist that would prevent or restrict the use of nutrient credits.

The guidelines below, which is adopted from DEQ's Guidance Memo No. XX-21XX, should be followed when determining if and where nutrient credits can be procured for a project/land disturbing activity:

A. Review and verification that the selected project is not located in an area that would be in contravention of any local water quality-based limitations for the particular project. These limitations shall also include any surface waters that have an approved TMDL report addressing Phosphorus and Nitrogen associated with a construction activity.

B. Review and verification there are certified Nutrient Credits banks that can service the project. Nutrient credit use is allowed for all basins statewide. However, not all basins have certified nutrient credit banks. The following criteria shall be followed:

1. Standard Credit Use

Review and verify that the project is not located in a local nutrient TMDL area and that discharges can be traced downstream to the first assessed stream without applicable impairments. This project is considered to be eligible for "standard credit use" and can

a. Use nutrient credits generated in the same or adjacent 8-digit hydrologic unit code (HUC) within the same tributary of the project.

b. If it is determined that no credits are available in the same or adjacent 8-digit HUC within the same tributary, then project may acquire the credits anywhere within the same tributary of the project.

However, under no circumstance may a project use credits generated in a separate tributary.

2. Local Nutrient TMDL Credit Use

If a project is located in the Chesapeake Bay watershed and is also located in a local nutrient TMDL area with a nutrient TMDL that is more stringent than the Chesapeake Bay TMDL (i.e., has a higher required percent nitrogen and/or phosphorus reduction requirement for developed lands) or if a project is located in Southern Rivers watersheds (i.e., outside of the Chesapeake Bay watershed) and within a local nutrient TMDL area, then the project's discharge must be traced downstream to the limits of the local nutrient TMDL area.

a. If the project's discharge reaches applicable impaired waters within the local nutrient TMDL area, then credits may only be acquired upstream of where the project's discharge reaches applicable impaired waters.

b. If the project's discharge does not drain to applicable impaired waters within the local nutrient TMDL area, then the project may follow the same rules for standard credit use (same or adjacent 8-digit HUC within the same tributary).

The TMDL Report for the local nutrient TMDL should be reviewed to determine if the local nutrient TMDL's required nitrogen and/or phosphorus percent reduction requirements for developed lands are greater or lesser than the Chesapeake Bay TMDL nutrient reduction requirements for developed lands seen below:

L2 Scoping Reductions for Chesapeake Bay TMDL		
	Total Nitrogen	Total Phosphorus
Impervious	9%	16%
Pervious	6%	7.25%

3. Impaired Water Credit Use

If the project is located outside of a nutrient TMDL area, then the project's discharge must be traced downstream to the first assessed waters. If the first assessed waters are applicable impaired waters, then credit acquisition shall be made in accordance with the following hierarchy:

a. Upstream of where the discharge reaches impaired waters, if credits are available;
b. Within the same 12-digit HUC, if credits are available;
c. Within the same 10-digit HUC, if credits are available;
d. Within the same 8-digit HUC and within the same tributary, if credits are available;
e. Within an adjacent 8-digit HUC and within the same tributary, if credits are available; or
f. Within the same tributary.

The Nutrient Credit Flow Diagram included at the end of this IIM provides a simplified means of determining where nutrient credits can be procured for a project/land disturbing activity.

The Virginia Department of Environmental Quality State Wide Nutrient Watershed Impairment Map is available at: http://www.virginiadot.org/business/locdes/nutrient_credits.asp

PROCUREMENT OF NUTRIENT CREDITS FOR PROJECTS

Where the purchase of nutrient credits is proposed to satisfy water quality compliance for a VDOT project, they must be secured through purchase from an approved Nutrient Credit Bank prior to the beginning of land disturbance.

Typically, the nutrient credits should be secured prior to the public hearing stage of the plan development process in order to ensure their availability / compliance when project construction begins.

The credits will be secured using the ASD's IFB procurement process (where more than one Bank is available from which to purchase) Nutrient Credits may be purchased based on a project's specific need. In either case, the State Water Resources/MS4 Engineer will coordinate the procurement process with ASD. For project specific purchases, the project's budget will be debited at the time of purchase.

The cost of a pound of nutrient credit for phosphorus will vary. It is recommended that the District Hydraulics Engineer contact the State Water Resources/MS4 Engineer to verify the cost per pound, (a onetime charge) be used when making a comparison of the cost of the purchase of nutrient credits to the cost of onsite BMPs or other offsite options.

The District Hydraulics Engineer shall provide written notification of such to the Project Manager and he or she shall forward the notification to the State Water Resources/MS4 Engineer. The following information is to be provided on the latest version of the LD-453 form:

- Project Number
- UPC Number
- Project Location (County/City)
- Project Latitude and Longitude (in decimal degree)
- Project 4th Order 8 digit HUC
- Land Disturbance (rounded to the nearest one hundredth of an acre)
- Amount Of Nutrient Load Reductions Achieved Onsite, (pounds/acre/year)
- Amount of Nutrient Credits Needed To Be Purchased (pounds/acre/year)
- Documentation of the Pre-evaluation process

The State Water Resources/MS4 Engineer will determine the availability of nutrient credits for use in satisfying the water quality requirements for the project and will notify the District Hydraulics Engineer of their determination. Where nutrient credits are available, the State Water Resources/MS4 Engineer will secure from the District Hydraulics Engineer a project charge code for the purchase. The State Water Resources/MS4 Engineer will then begin the process of securing the necessary nutrient credits. Once the procurement process is completed, the Project Manager and the District Hydraulics Engineer will be notified of the name of the Bank from which the nutrient credits were purchased so that it can be included with other required information in the appropriate sections of the SWPPP General Information Sheets associated with the land disturbing activity.

There are times when someone other than VDOT (e.g., Design Build contractor, locality, etc.) purchases nutrient credits to satisfy water quality requirements on projects involving VDOT owned or operated roadways/facilities (existing or future). In these instances, the purchaser must complete a "Nutrient Credit Assignment Form" to transfer the ownership of such nutrient credits from the purchaser to VDOT. This form must be signed and submitted to the appropriate District Hydraulics Engineer. The District Hydraulics Engineer will upload this information into the Central Office Nutrient Credit submittal database.

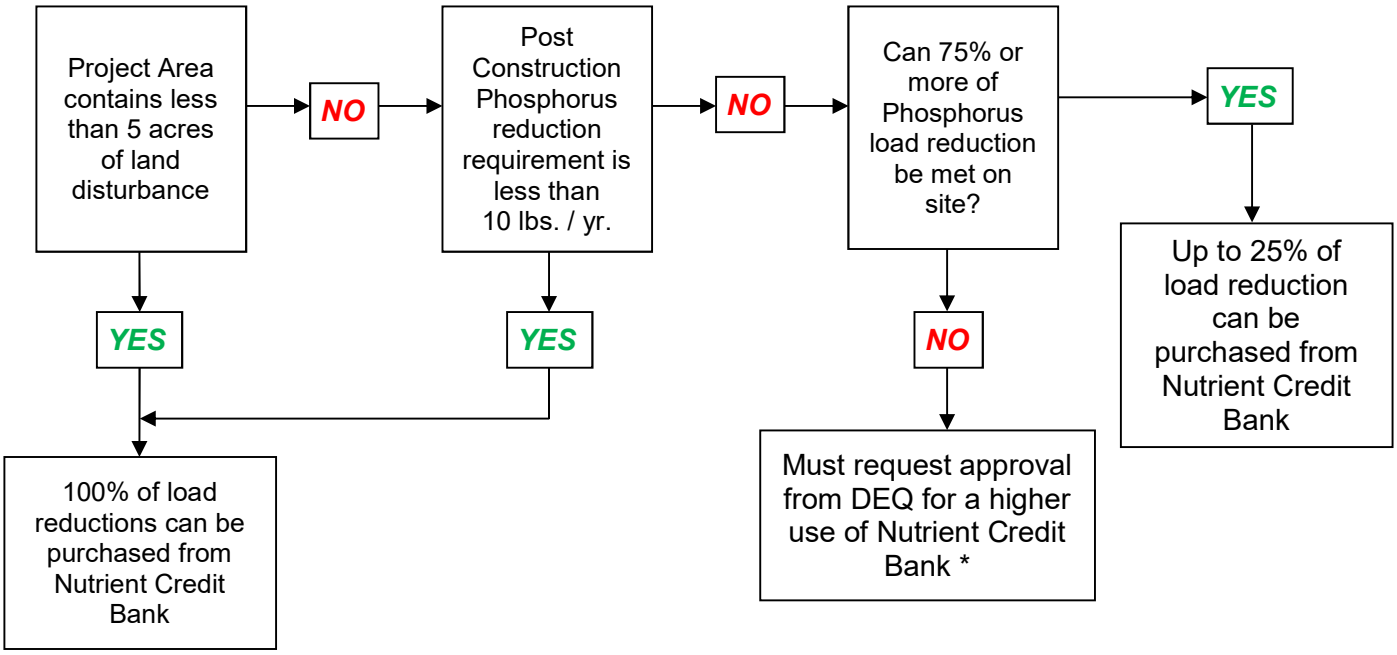
The "Nutrient Credit Assignment Agreement Instructions" and "Assignment Agreement" are available at the following link: http://www.virginiadot.org/business/locdes/nutrient_credits.asp

RECORD KEEPING AND REPORTING

VDOT is required to submit an annual report to the DEQ that identifies the nutrient credits purchased during the reporting year. The reporting period is from July 1st to June 30th.

The use of nutrient credits is to be documented in the appropriate section of the SWPPP General Information Sheets associated with the land disturbing activity. Upon completion of the project, the appropriate information regarding the purchase of nutrient credits shall be reported on Form LD-445D, Section III, for termination of VSMP Construction Permit coverage.

NUTRIENT CREDIT USE FLOW DIAGRAM



* See Item #4 under "Determination of Applicability"

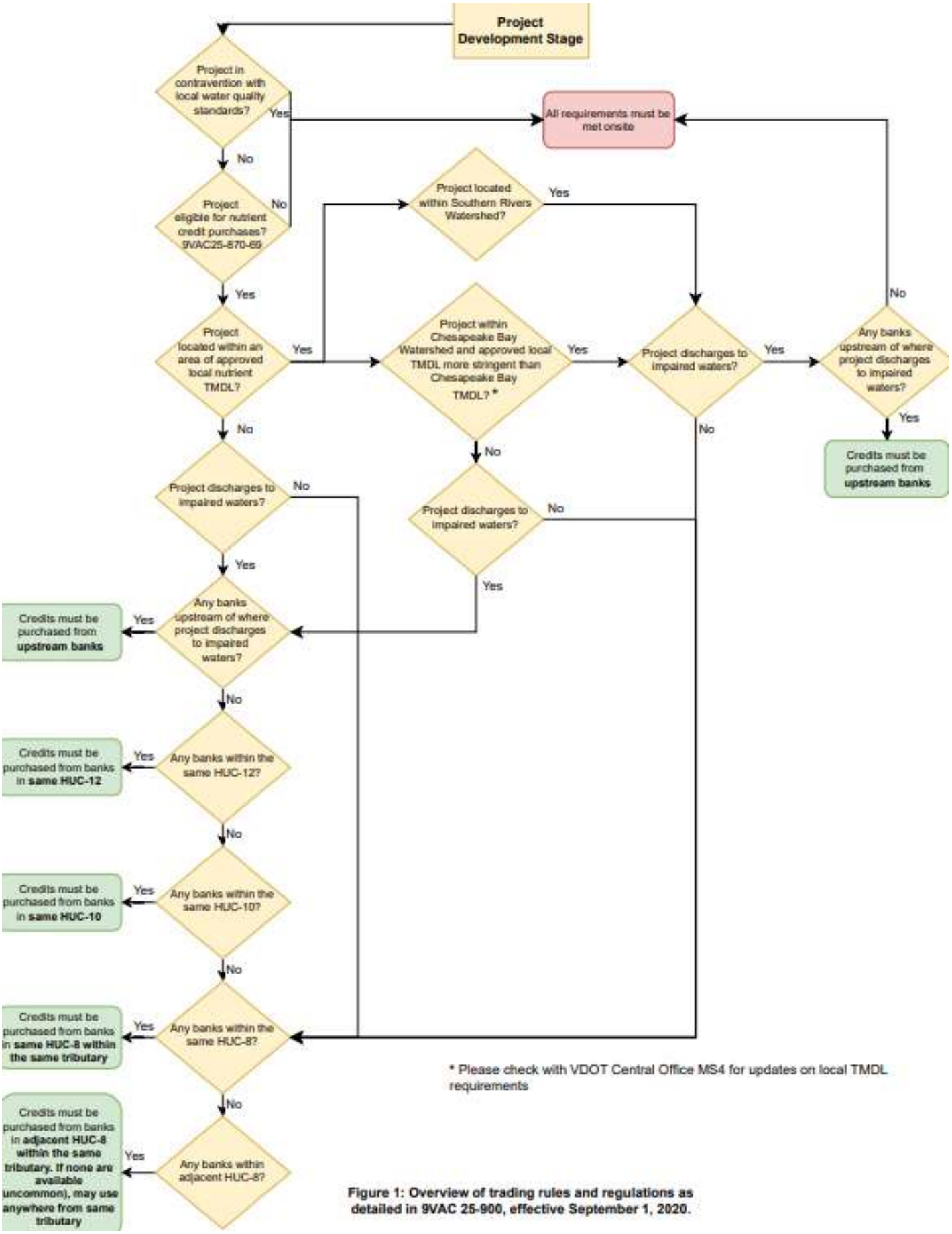


Figure 1: Overview of trading rules and regulations as detailed in 9VAC 25-900, effective September 1, 2020.

Appendix J – SWPPP/VPDES Permit Crosswalk

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
General Permit Application and Termination of Coverage			
1	• 9VAC25-880-50 General Permit Application	Registration Statement	• Form LD-445 Construction Activities • SWPPP General Information Sheet (GIS), Section I General Information, Item 15
2	•		•
3	• 9VAC25-850-30 • 9VAC25-870-55 • 9VAC25-880-40	Plan Review by DEQ Certified Individual	• Form LD-445C Erosion And Sediment Control (ESC) and Stormwater Management (SWM) Certification Form • SWPPP General Information Sheet (GIS), Section I General Information, Item 15
4	• 9VAC25-880-60 Termination of General Permit Coverage • 9VAC25-880-70 Part I F	Notice of Termination	• Form LD-445D VPDES Construction Permit Coverage Termination Notice • SWPPP GIS, Section I General Information, Item 15
Stormwater Pollution Prevention Plan (9VAC25-880-70 Part II)			
5	• A.1	General Information	• Form LD-445 Construction Activities • SWPPP GIS, Section I General Information
6	• A.1.a	Copy of Registration Statement	• Form LD-445 Construction Activities • SWPPP GIS, Section I General Information, Item 3
7	• A.1.b	Notice of Coverage Letter	• SWPPP GIS, Section I General Information, Item 3 • Posted onsite with Form LD-445A (SWPPP GIS, Section I, Item 15) • A copy of the Notice of Coverage Letter is maintained along with other SWPPP documents.
8	• A.1.c, d, e	Copy of general VPDES permit VAR10	• Copy of VPDES permit with SWPPP (c) • SWPPP GIS (section 1 Note 1 narrative) (d) • ESC/SWM/Construction plans (e, 1-5)

			• Supplemental ESC Plans provided by contractor for support activities – Section I GIS note 4 (e 6) • SWPPP GIS Section I, Note 14 (rain gage) (e 7)
9	• A.2	ESC Plan	• Construction Plans, General Notes for ESC • SWPPP GIS, Section II Erosion and Sediment Control • Supplemental ESC Plan(s) provided by Contractor for onsite support activities

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
10	• A.2.c.(8)	Stabilization of disturbed areas will be initiated immediately when land-disturbing activities have ceased on any portion of the site and will not resume for a period exceeding 14 days	• SWPPP GIS, Section II, Items 2, 6, 7, 8, 9, and 14 • Project Grading Schedule • Daily Diaries • Daily Work Reports • Record Drawings
11	• A.3	SWM Plan	• Construction Plans • SWPPP GIS, Section IV Post Construction Stormwater Management • SWPPP GIS, Section VI Permanent BMP Information
12	• A.3	Stormwater Management Computations	• Located where shown on SWPPP GIS, Section IV, Item 6
13	• A.4	Pollution Prevention (P2)	• SWPPP GIS, Section V Pollution Prevention Plan • P2 Plan(s) provided by Contractor
14	• A.4.d	Identify person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity	• SWPPP GIS, Section I, Items 4, 11, and 12 • SWPPP GIS, Section III, Item 3 • SWPPP GIS , Section V, Item 3.d • P2 Plan(s)
15	• A.4.f	Providing pollution prevention awareness of all applicable wastes to personnel	• P2 Plan(s) • ESCCC training
16	• A.5	Discharges to impaired waters, surface waters with an applicable TMDL WLA, and exceptional waters	• LD445 form • SWPPP GIS, Section I, Items 6, 7, 8, 9 and 13 • SWPPP GIS, Section 2 Item 10 • Construction Plans (ESC) • P2 Plan(s)

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
17	• A.6	Qualified personnel	• SWPPP GIS, Section I, Item 11
18	• A.7	Delegation of authority	• Form LD-445H Delegation of Authority • SWPPP General Information Signature Line • SWPPP GIS, Section I, Item 11
19	• A.8	SWPPP signature	• Form LD-445E SWPPP Certification • SWPPP GIS, Section III, Item 4
20	• B	SWPPP amendments, modification, and updates	• SWPPP GIS, Section III, Item 4 • Drainage Manual, Chapter 10 • Project Grading Schedule • Daily Diaries • Daily Work Reports • Record Drawings
21	• B.4.a	A record of dates when major grading activities occur; construction activities temporarily or permanently cease on a portion of the site; and stabilization measures are initiated.	• SWPPP GIS, Section II, Items 1, 7, and 8 • Project Grading Schedule • Daily Diaries • Daily Work Reports • Record Drawings
22	• D	SWPPP availability	• Form LD-445A VPDES Construction Permit Contact Information (posted onsite) • SWPPP GIS, Section III, Items 1, 3, 4, 5, 6, and 7
23	• E	SWPPP implementation	• SWPPP GIS, Section III, Items 1, 2, and 3 • Form LD-445E SWPPP Certification • Form C-45 SWPPP Contractor Certification • Form C-107 Part I • Environmental Compliance Report
24	• F.1	Qualified personnel responsible for inspections	• SWPPP GIS, Section I, Item 11 • Form C-107 Part I

DEQ-VDOT Crosswalk
General VPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) and Stormwater Pollution Prevention Plan (SWPPP)

Item No.	DEQ Requirement	DEQ Document/Form	VDOT Document/Form
25	• F.2	Inspection schedule	• SWPPP GIS, Section I, Items 13 and 14 • C-107 Part I
26	• F.3	Inspection requirements	• C-107 Part I
27	• F.4	Inspection report	• C-107 Part I
28	• G	Corrective actions	• SWPPP GIS, Section III, Item 2 • C-107 Part I • Environmental Compliance Report